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OAK RIDGE Y-12 PLANT INFORMATION CONTROL FORM

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MARTIN MARIETTA ENERGY SYSTEMS, INC.

April 15, 1986

W. F. Furth

Historic Chemical Release Report

Attached is the "Historic Chemical Release Report" for the Y-12 Plant. As can be noted, there are many gaps in the information. Some of this is because of the short time available but most of the gaps are because the information is not available. According to your instructions, we have provided the "best we could" in the time allowed. With more time, further information about the chemicals can be provided to complete the chemical release data form. Undoubtedly, a substantial effort could produce additional use information, but our efforts to date indicate the cost would far outweigh the value. An estimated 450 man-hours of the time of experienced and knowledgeable employees who are crucial to other work has already been spent in preparation of this report.

The list of chemicals selected was based on choices by several Y-12 individuals who have been involved in the use of chemicals during several years of plant operations. While it is no doubt arbitrary, we feel it represents a reasonable selection of chemicals of concern at Y-12 throughout the years. Materials not included are those in common public use such as fuels, cleaning supplies, or insecticides and those which may be hazardous but are used only in very small quantities and under very controlled conditions. A few other chemicals were selected for inclusion but no data was found concerning their usage.

The material provided is in many cases calculated or averaged since the records located did not provide year by year data. The extensive search made for usage and disposal records has revealed that in conversion from file to computer record systems, much of the historic data was eliminated, consistent with DOE instructions.

We feel we have provided essentially all the data available and will conclude our research with the submission of this report. Classified data forms will be forwarded under separate cover.

If you have questions, please contact W. G. Butturini at 4-3692.

R. A. Williams

for Gordon G. Fee, 9704-2, MS-14 (4-2527)

GGF:WGButturini:jll

Attachment: As Stated

cc/att.: W. G. Butturini - RC
G. G. Fee
W. L. Harper
G. E. Isham
M. L. Jones

D. T. Sisson
W. F. Thomas
J. E. Vath
L. F. Willis

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonium Nitrate

Uses:

Solid X Liquid Gas .

Listed as Toxic: Yes No .

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

May explode under confinement and high temperatures. On decomposition emits highly toxic fumes.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

U.S. NATIONAL CHEMICAL USAGE

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Estimated Distribution in %					
					Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Ammonium Nitrate	1959	1,600,000			100*					
	1958	1,600,000			100					
*Discharged as ammonium sulfate and ammonium nitrate.										

CHEMICAL RELEASE DATA FORM

Chemical Name: Toluene Diisocyanate

Uses:

Solid _____ Liquid ☒ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Toxic by ingestion and inhalation, strong irritant to skin and tissues, especially eyes. Tolerance 0.02 ppm in air.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Urethane foam component (toluene-diisocyanate)	1985	11,045	95	0.2		4.8				
	1984	8,386	95	0.2		4.8				
	1983	9,409	95	0.2		4.8				
	1982	8,795	95	0.2		4.8				
	1981	8,782	95	0.2		4.8				
	1980	7,364	95	0.2		4.8				
	1979	10,023	95	0.2		4.8				

There was considerable use of this compound prior to 1979 but no records. Considerable amounts were buried on-site.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Tetrachloroethylene	1985	383,600		84		16				
	1984	423,600		87		13				
	1983	589,636		96		4				
	1982	686,818		94		6				
	1981	493,818		85		15				
	1980	514,272		99		1				
	1979	332,455		100						

CHEMICAL RELEASE DATA FORM

Chemical Name: Chlorine

Uses:

Solid _____ Liquid _____ Gas X _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Chronic exposures can cause tooth corrosion, acne, and reduction in pulmonary function. It is a powerful skin, eye, and respiratory tract irritant and can cause fatal pulmonary edema.

Known or Suspected Environmental Impacts:

It is toxic to vegetation, white perch and striped bass, larvae, bluegill, minnows, and daphnia magna.

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include (1) adequate ventilation (2) rubber clothing (3) chemical goggles (4) face shield (5) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Chlorine	1946	27,000		2**	29***				69*	
	1945	177,000		2	57				41	
	1944	158,500		2	68				30	
	1943	58,000		2	71				27	

*Trapped in vacuum pump oils. The decomposition products were removed from the oils by reclaimers.

**Neutralized with NH_3 to ammonium chloride.

***Neutralized with NaOH to sodium chloride.

CHEMICAL RELEASE DATA FORM

Chemical Name: Copper Cyanide

Uses:

Solid ☒ Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Following severe exposure to dust, symptoms of cyanide poisoning may develop. Ingestion causes confusion, dizziness, unconsciousness, rapid pulse, convulsions, and paralysis. Contact with eyes and skin causes irritation. Symptoms of inhalation exposure are similar to those caused by ingestion.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include (1) adequate ventilation, (2) gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Copper Cyanide	1985	85							100	
	1984								100	
	1983	800							100	
	1982	+350							100	
	1981	275							100	
	1980	923							100	
	1979	967							100	

*Destroyed in plating bath prior to disposal of bath.

CHEMICAL RELEASE DATA FORM

Chemical Name: Tris (hydroxymethyl) nitromethane

Uses:

Solid ☒ Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Moderate fire risk. Probably irritant to skin and eyes.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

USING CHEMICAL USAGE

Estimated Distribution in %

[illegible]

CHEMICAL RELEASE DATA FORM

Chemical Name: Zirconium Oxide

Uses:

Solid ☒ Liquid ☐ Gas ☐

Listed as Toxic: Yes ☐ No ☐

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Tolerance 5 mg per cubic meter of air.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Zirconium Oxide	1985	1,398				100*				
	1984	1,091			100**					
	1983	818			100					
	1982	727			100					
	1981	590			100					
	1980	318			100					
	1979	91			100					

*As Raffinate.

**Direct liquid discharge of waste discontinued in 1985.

CHEMICAL RELEASE DATA FORM

Chemical Name: Lead Carbonate

Uses:

Solid X Liquid Gas .

Listed as Toxic: Yes No .

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Toxic by inhalation. Tolerance - 0.15 mg per cubic meter of air.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Lead Carbonate	1966	41,120	90			10*				

*Stored at K-25

CHEMICAL RELEASE DATA FORM

Chemical Name: Chromic Acid

Uses:

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Highly toxic, corrosive to skin. Tolerance 0.1 mg per cubic meter of air. Powerful oxidizing agent. May ignite on contact with organic materials.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

CHEMICAL RELEASE DATA FORM

Chemical Name: Furfuryl Alcohol

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Toxic by inhalation. May react explosively with mineral and some organic acids. Tolerance - 5 ppm in air.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Furfuryl Alcohol Polymer	1973	4,580	60						40*	
	1972	4,580	60						40	
	1971	5,725	60						40	
	1970	9,160	60						40	
	1969	11,450	60						40	
	1968	11,450	60						40	
	1967	11,450	60						40	
	1966	11,450	60						40	
	1965	9,160	60						40	
	1964	6,870	60						40	
	1963	6,870	60						40	
*Incinerated some on site, some off site.	1962	4,580	60						40	
	1961	4,580	60						40	

CHEMICAL RELEASE DATA FORM

Chemical Name: Potassium Cyanide

Uses:

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Symptoms which can occur from either oral or inhalation exposure are sore throat, faintness, labored breathing and abdominal pain. Severe cases can result in convulsions and death. Contact with skin can cause chemical burns and with eyes, blurred vision and burns.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

[illegible]

CHEMICAL RELEASE DATA FORM

Chemical Name: Perchloric Acid

Uses:

Solid _____ Liquid ☒ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Acute exposure by inhalation causes a burning sensation in nose and throat and orally, blistering and chemical burns to mouth, esophagus, and stomach. Chemical burns of eyes and skin occur following acute exposure. Vomiting and severe coughing can result from prolonged or excessive exposure.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation (2) rubber clothing (3) chemical goggles (4) face shield (5) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE:

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Perchloric Acid	1985	429		10%*		90**				
	1984	384		10%		90				
	1983	290		10%		90				
	1982	334		10%		90				
	1981	111		10%		90				
	1980	50		10%		90				
	1979	129		10%		90				
<p>*As HCl gas.</p> <p>**Primarily as hydrochloric acid.</p> <p>Earlier years included both the release of the gas and the hydrochloric acid as a liquid effluent. Quantities were probably somewhat larger.</p>										

***As HCl gas.**

****primarily as hydrochloric acid.**

Earlier years included both the release of the gas and the hydrochloric acid as a liquid effluent. Quantities were probably somewhat larger.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium Cyanide

Uses:

Solid X Liquid X Gas .

Listed as Toxic: Yes No .

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

It may be absorbed into the body by inhalation, ingestion, and through the skin. Symptoms which can result from either oral or inhalation exposure are sore throat, faintness, labored breathing and abdominal pain. Serious cases may result in convulsions and death. Contact with skin can cause burns and with eyes, blurred vision and chemical burns.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include (1) adequate ventilation, (2) gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Sodium Cyanide	1985	91							100%*	
	1984	-							100%	
	1983	1,000							100%	
	1982	363							100%	
	1981	273							100%	
	1980	954							100%	
	1979	956							100%	
	And a number of		years before 1979.							
*Destroyed										

*Destroyed

CHEMICAL RELEASE DATA FORM

Chemical Name: Chloroform

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts: Chronic exposure can damage liver and kidney. Acute inhalation exposure can cause CNS depression, GI disturbances, intracranial pressure changes, respiratory disorders, and heart arrest. Acute oral intake can cause GI disturbances, unconsciousness and possibly liver and kidney damage. Acute skin and eye contact causes pain and severe irritation of eyes.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection: Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) rubber gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Chloroform	1985	214		10		90				
	1984	158		10		90				
	1983	203		10		90				
	1982	169		10		90				
	1981	174		10		90				
	1980	73		10		90				
	1979	336		10		90				

CHEMICAL RELEASE DATA FORM

Chemical Name: Methyl Ethyl Ketone

Uses:

Solid _____ Liquid ☒ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts: Chronic exposure can cause headache, throat irritation, dermatitis, and numbness of fingers (affects peripheral nervous system). Acute inhalation exposure causes nose and throat irritation, headache, and dizziness. CNS depression may occur depending on concentration. Acute oral exposure may cause vomiting and nausea. It is skin and eye irritant.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) rubber gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE:

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Methyl Ethyl Ketone	1985	495.4		12		88				
	1984	678.6		25		75				
	1983	576.8		25		75				
	1982	740.3		25		75				
	1981	692		25		75				
	1980	500		25		75				
	1979	1,005		25		75				
<p>MEK also used in earlier years in quantity as solvent/cleaning material. Significant amounts airborne and in liquid effluent.</p>										

CHEMICAL RELEASE DATA FORM

Chemical Name: Benzene

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts: Chronic exposure may cause blood disorders, including aplastic anemia and leukemia, embryonal death and fetotoxicity and chromosomal aberrations (bone marrow and lymphocytes). Acute effects from ingestion or inhalation are irritation of mucous membranes, convulsions, CNS depression and respiratory failure resulting in possible death. Harmful amounts may be absorbed through skin. It is an irritant to the skin and eyes and causes transient injury to cornea. It causes dry skin.

Known or Suspected Environmental Impacts:

Biological effects reported in algae, protozoa, grass shrimp, crab larvae, shrimp, bluegill, fathead minnows, bass, herring and anchovy larvae, brown trout and clawed toads.

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include (1) adequate ventilation, (2) rubber gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

--
Source of Chemical Distribution Information/Accuracy:

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Benzene	1985	35		15		85				
	1984	31		15		85				
	1983	59		15		85				
	1982	95		15		85				
	1981	41		15		85				
	1980	--								
	1979	--								
% distributions above are estimates.										

CHEMICAL RELEASE DATA FORM

Chemical Name: Toulene

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts: Chronic effects are defatting of skin and hematologic disorders. Brain injury may result from chronic sniffing. It is an eye and respiratory irritant. High vapor concentration causes drowsiness, vision disorders, and possibly cardiac arrhythmias and coma. If aspirated it may cause pulmonary edema. Orally it can cause nausea, vomiting, abdominal pain, diarrhea, and respiratory depression. Liver, kidney, and heart injury are possible.

Known or Suspected Environmental Impacts:

It can be lethal to rainbow trout, channel catfish and bluegill.

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include (1) adequate ventilation, (2) rubber gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE:

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Toluene	1985	161		10		90				
	1984	393		10		90				
	1983	268		10		90				
	1982	251		10		90				
	1981	367		10		90				
	1980	311		20		80				
	1979	384		20		80				
Toluene used in much greater quantities in earlier years but there are no records. It was in the liquid effluents from plant and released into air.										

CHEMICAL RELEASE DATA FORM

Chemical Name: Hydrofluoric Acid

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Chronic effects which may result from inhalation or ingestion are fluorosis weight loss, malaise, anemia, leukopenia, discoloration of teeth and osteosclerosis. Repeated exposure to low concentration of gas may cause nasal congestion, bronchitis, bone changes and chronic irritation of nose and throat. Acute exposure to skin causes burns and ulceration. Liquid or vapor causes chemical burns and permanent vision defects or blindness. More severe effects may occur depending on concentration.

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation (2) rubber clothing (3) chemical goggles (4) face shield (5) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Hydrofluoric Acid (continued)	1958	11,000	32	.05	67.95					
	1957	11,000	32	.05	67.95					
	1956	11,000	32	.05	67.95					
	1955	5,000	75	.05	24.95					
	1954	5,000	75	.05	24.95					
	1953	5,000	75	.05	24.95					
	1952	5,000	75	.05	24.95					
	1951	5,000	75	.05	24.95					
	1950	5,000	75	.05	24.95					
	1946	4,000	30		70*					
	1945	2,600	30		70					

*Discharged in caustic scrubber solution.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Hydrofluoric Acid	1985	5,000	75		25					
	1984	5,000	75		25					
	1983	5,000	75		25					
	1982	5,000	75		25					
	1981	5,000	75		25					
	1980	5,000	75		25					
	1979	5,000	75		25					
	1978	5,000	75		25					
	1977	5,000	75		25					
	1976	5,000	75		25					
	1975	5,000	75		25					
	1974	5,000	75		25					
	1973	5,000	75		25					
	1972	150	75	.05	24.95					
	1971	150	75	.05	24.95					
	1970	150	75	.05	24.95					
	1969	150	75	.05	24.95					
	1968	150	75	.05	24.95					
	1967	150	75	.05	24.95					
	1966	150	75	.05	24.95					
	1965	150	75	.05	24.95					
	1964	150	75	.05	24.95					
	1963	150	75	.05	24.95					
	1962	11,000	32	.05	67.95					
	1961	11,000	32	.05	67.95					
	1960	11,000	32	.05	67.95					
	1959	11,000	32	.05	67.95					

CHEMICAL RELEASE DATA FORM

Chemical Name: Aluminum Nitrate

Uses:

Solid X Liquid Gas .

Listed as Toxic: Yes No .

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Strong oxidizing agent.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

STANDARD CHEMICAL USAGE

BETA PROCESS

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Aluminum Nitrate	1946	16,500			100*					
	1945	11,000			100					
*Discharged as aluminum fluoride in a nitrate solution.										

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonium Hydroxide

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Chronic exposure causes respiratory disorders. Acute inhalation exposure causes severe respiratory irritation resulting in pulmonary edema, bronchitis, respiration disorders, vomiting and nausea. Acute oral intake causes corrosion of upper GI tract and chemical burns. Acute exposure of eyes and skin results in irritation and chemical burns.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include (1) adequate ventilation (2) rubber clothing (3) chemical goggles (4) face shield (5) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

CHEMICAL RELEASE DATA FORM

Chemical Name: Phthalic Acid

Uses:

Solid X Liquid Gas .

Listed as Toxic: Yes No .

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Irritating to mucuous membranes and in high
concentrations narcotic.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

--
Source of Chemical Distribution Information/Accuracy:

ESIMANIL® CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Phthalic Acid	1953	13,000			100*					
	1952	115,000			100					
*Discharged as ammonium phthalate.										

CHEMICAL RELEASE DATA FORM

Chemical Name: Salicylic Acid

Uses:

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Ingestion of large amounts can cause vomiting, abdominal pains, increased respiration, acidosis, and mental disturbances. May cause rashes.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

U.S. MARINE CORP. CHEMICAL USAGE.

Estimated Distribution in \mathcal{X}

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Salicylic Acid	1951	700,000			5*				95**	
	1952	78,000			5				95	
<p>*Discharged in ammonium chloride solution.</p> <p>**Destroyed by pyrolysis.</p>										

*Discharged in ammonium chloride solution.

****Destroyed by pyrolysis.**

CHEMICAL RELEASE DATA FORM

Chemical Name: Zirconium Tetrachloride

Uses:

Solid X Liquid Gas .

Listed as Toxic: Yes No .

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Toxic and irritant. Tolerance - 5 mg per cubic meter in air.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Zirconium Tetrachloride	1953	72,000	99	.02	.02					.6 as hafnium
	1952	649,000	99	.02	.02					
	1951	648,000	99	.02	.02					
	1950	72,000	99	.02	.02					

CHEMICAL RELEASE DATA FORM

Chemical Name: Methyl Isobutyl Ketone

Uses: Solvent

Solid _____ Liquid ☒ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Flammable, dangerous fire risk. Tolerance - 100 ppm in air.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

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Source of Chemical Distribution Information/Accuracy:

CHEMICAL RELEASE DATA FORM

Chemical Name: Hafnium

Uses:

Solid ☒ Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Explosive in powder form, either dry or wet with less than 25% water.
Tolerance - 0.5 mg per cubic meter of air.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

U.S. INHALATION CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Hafnium	1953	500	50		50*					
	1952	4,000	50		50					
	1951	4,000	50		50					
	1950	500	50		50					
NOTE: This element was separated from zirconium. *Discharged as hafnium hydroxide solution.										

CHEMICAL RELEASE DATA FORM

Chemical Name: Asbestos

Uses:

Solid X Liquid Gas .

Listed as Toxic: Yes No .

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

It causes delayed toxicity to respiratory tract seen after long periods of exposure.
It may cause lung cancer, dyspnea, dry cough, reduced appetite, and weakness.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) gloves, (3) safety glasses, (4) proper respiratory protection, paper suits.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	KGS			
							Onsite Burial	Onsite Burial	Offsite Burial	Other
Asbestos-Bearing Materials	1985						168,794			
	1984						50,018			
	1983						72,270			
	1982						45,482			
	1981						18,580			
	1980						20,324			
	1979						36,762			
	1978						6,425*			

*Records of asbestos disposal began in 1978.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium Dichromate

Uses:

Solid ☒ Liquid _____ Gas _____

Listed as Toxic: Yes _____ No _____

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Liver and CNS damage can result from chronic exposure. Acute inhalation exposure causes irritation, shortness of breath, chest pain, and chemical pneumonia. Acute oral exposure causes corrosion of mucous membranes, gastroenteritis, vascular collapse, delirium, liver damage and renal failure. It is corrosive to skin and eyes.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include (1) adequate ventilation, (2) gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Sodium Dichromate	1985	13								
	1984	106								
	1983	59								
	1982	84								
	1981	2								
	1980	50								
	1979	—								
Disposition of this material is difficult to estimate. It is used in a variety of surface treatments and is disposed of in different manners - no records prior to 1979.										

CHEMICAL RELEASE DATA FORM

Chemical Name: Phosphoric Acid

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Toxic by ingestion and inhalation. Irritant to skin and eyes.
Tolerance - 1 mg per cubic meter of air.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Phosphoric Acid	1985	1,920								
	1984	2,830								
	1983	790								
	1982	118								
	1981	107								
	1980	286								
	1979	805								
<p>Disposition of this material cannot be estimated. Some of it had to be put through uranium recovery; some to on-site storage, but cannot estimate relative amounts. Etch procedure using the H_3PO_4 was instituted approximately 1962. No records available prior to 1979.</p>										

CHEMICAL RELEASE DATA FORM

Chemical Name: Trichloroethylene

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Toxic by inhalation, causes cancer in mice.
Tolerance - 100 ppm in air.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Trichloroethylene	1985	16		20		80				
	1984	14		50		50				
	1983	39		50		50				
	1982	46		50		50				
	1981	16		50		50				
	1980	37		50		50				
	1979	—		50		50				

CHEMICAL RELEASE DATA FORM

Chemical Name: Lime (Calcium Oxide)

Uses:

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Slightly dangerous on contact with water, steam, acid, or acid fumes. Will react to produce heat.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

CHEMICAL RELEASE DATA FORM

Chemical Name: Hydrogen Peroxide

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Concentrated solutions are highly toxic and strong irritants. Can easily cause blistering of the skin. Dangerous fire and explosion risk. Tolerance 1 ppm in air.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

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Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

ALPHA AND BETA PROCESS

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Hydrogen Peroxide	1946	36,000		10*	90**					
	1945	175,000		10	90					
	1944	113,000		10	90					
	1943	40,000		10	90					
*Converted to water, carbon monoxide, carbon dioxide, oxygen, etc., by subsequent evaporation and pyrolysis of the produced precipitation process.										
**Discharged as dilute nitric acid and hydrogen peroxide.										

CHEMICAL RELEASE DATA FORM

Chemical Name: Calcium Nitrate

Uses:

Solid ☒ Liquid ☐ Gas ☐

Listed as Toxic: Yes ☐ No ☐

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Strong oxidizer. Dangerous fire risk in contact with organic materials. May explode if shocked or heated.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

BETA PROCESS

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Calcium Nitrate	1946	1,650			100*					
	1945	1,250			100					
	1944	350			100					
*Discharged as approximately 40% solution with nitric acid, iron nitrate contaminants.										

CHEMICAL RELEASE DATA FORM

Chemical Name: Diethyl Ether

Uses:

Solid _____ Liquid ☒ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Extremely flammable. Severe fire and explosion hazard when exposed to heat or flame.
Forms explosive peroxides. Tolerance 400 ppm in air.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

BETA PROCESS

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Diethyl Ether	1944	3,000		10					90*	

*Eventually decomposed by pyrolysis.

CHEMICAL RELEASE DATA FORM

Chemical Name: Cupric Nitrate

Uses:

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Irritating to skin and mucous membrane. In contact with organic materials it may cause violent combustion and explosion.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

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Source of Chemical Distribution Information/Accuracy:

STANDARD CHEMICAL USAGE

BETA PROCESS

Estimated Distribution in χ

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Cupric Nitrate	1946	163,000			100*					
	1945	124,000			100					
	1944	34,500			100					
*Discharged as a medium concentration nitrate solution.										

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethyl Alcohol

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Flammable, fire risk, depressant drug. Ingestion of moderate amounts causes lowering of inhibitions often succeeded by dizziness, headache, and nausea. Large intake causes loss of motor control, shallow respiration, and in rare cases unconsciousness.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

CHEMICAL RELEASE DATA FORM

Chemical Name: Carbon Tetrachloride

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts: It can be toxic by inhalation, ingestion or skin absorption. Acute effects are nausea, vomiting, diarrhea, headache, stupor, renal and liver damage, and possibly death. Chronic effects are primarily liver damage but kidney injury and visual disturbances also occur. Skin contact can lead to dermatitis through defatting action. According to IARC, evidence for carcinogenicity to humans is inadequate; evidence is sufficient for animals.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include (1) adequate ventilation, (2) rubber gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ALPHA AND BETA PROCESS

[illegible]

*Neutralized with ammonia or sodium hydroxide to carbonate or chloride.

CHEMICAL RELEASE DATA FORM

Chemical Name: Phosgene

Uses:

Solid _____ Liquid X Gas X.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Highly toxic by inhalation, strong irritant to eyes, tolerance - 0.1 ppm in air. May cause severe pulmonary edema or pneumonia. Inhalation of high concentrations causes choking, constricted feeling in chest, coughing, painful breathing.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Supplied air, full face mask.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

ALPHA AND BETA PROCESS

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Phosgene	1946	201,500		2*	98**					
	1945	475,500		2	98					
	1944	175,000		2	98					

*Neutralized with ammonia to carbonate and chloride.

**Neutralized with sodium hydroxide to carbonate and chloride.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonia

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Toxic and irritant by inhalation. Tolerance 25 ppm in air. Inhalation of concentrate fumes may be fatal. moderate fire risk.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

A. S. I. N. A. I. D. C. H. E. M. I. C. A. L. U. S. A. G. I.

ALPHA AND BETA PROCESS

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Ammonia	1946	8,500		5	95*					
	1945	61,500		5	95					
	1944	42,000		5	95					
	1943	15,000		5	95					
*Discharged as a solution of sodium chloride, sodium carbonate, sodium hypochlorite, or dilute ammonium nitrate.										

CHEMICAL RELEASE DATA FORM

Chemical Name: Sulfuric Acid

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

It is corrosive to all body tissues. Inhalation of concentrated vapor may cause serious damage to lungs. Contact with eyes may result in total loss of vision; skin contact may produce severe necrosis. Frequent contact with dilute solution can cause dermatitis. Ingestion may cause severe injury and death.

Known or Suspected Environmental Impacts:

Presence of atmospheric sulfuric acid can contribute to the acidification of rain water which affects animal and plant life.

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation (2) rubber clothing (3) chemical goggles (4) face shield (5) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Sulfuric Acid	1959	1,500,000			50*		50			
	1958	1,500,000			50		50			
*Discharged as a weak acid or magnesium sulfate			concentration of calcium sulfate							

CHEMICAL RELEASE DATA FORM

Chemical Name: Manganese Dioxide

Uses:

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Oxidizing agent. May ignite organic materials. Mildly toxic.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonium Sulfate

Uses:

Solid X Liquid Gas .

Listed as Toxic: Yes No .

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Low toxicity, mild irritant.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

STANDARD CHEMICAL USAGE.

Estimated Distribution in \mathcal{X}

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Ammonium Sulfate	1959	1,400,000			100*					
	1958	1,400,000			100					
*Discharged as a weak sulfuric acid solution.										

CHEMICAL RELEASE DATA FORM

Chemical Name: Belguard 550

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

May cause skin and eye irritation.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) rubber gloves, (3) chemical goggles (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Belguard 550 (Bell Chem. Co.)	1986 (thru March)	9,000			100%					
	1985	55,000			100%					
	1984	5,000			100%					

CHEMICAL RELEASE DATA FORM

Chemical Name: Biotreat VIII

Uses:

Solid X Liquid Gas .

Listed as Toxic: Yes No .

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

It is a severe eye irritant and causes dry skin to redden and burn.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation (2) rubber gloves, (3) chemical goggles (4) proper respirator protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Biotreat VIII (Bell Chem. Co.)	1986 (thru March)	1,000			100%					
	1985	6,000			100%					
	1984	550			100%					

CHEMICAL RELEASE DATA FORM

Chemical Name: Wrico ZC-304

Uses:

Solid _____ Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) rubber gloves, (3) chemical goggles, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

CHEMICAL RELEASE DATA FORM

Chemical Name: Zimmite ZC-304

Uses: Corrosion inhibitor

Solid_____ Liquid X Gas_____.

Listed as Toxic: Yes_____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

It is mildly toxic when ingested and eye and skin irritant.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation (2) rubber gloves, (3) chemical goggles, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Wrico ZC-304* (Wright Chem. Co.)	1985	900			100%					
Zimmite ZC-304* (Zimmite Chem. Co.)	1984	55,000			100%					
	1983	55,000			100%					
(1980-Feb. 1985 used in all cooling towers)	1982	55,000			100%					
(1974-1980 used in one half of towers)	1981	55,000			100%					
	1980	55,000			100%					
	1979	28,000			100%					
	1978	28,000			100%					
*Note: Wrico ZC-304 and Zimmite ZC-304 are the same	1977	28,000			100%					
chemical; Wright Chemical Company	1976	28,000			100%					
bought the Zimmite Chemical Company.	1975	28,000			100%					
	1974	28,000			100%					

CHEMICAL RELEASE DATA FORM

Chemical Name: Chemtrol 19

Uses: Microbiocide, for cool tower water treatment

Solid _____ Liquid ☒ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

It can be harmful if swallowed and is a mild eye and skin irritant.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) rubber gloves, (3) chemical goggles, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Chemtrol No. 19 (Wright or Zimmite Chemical Companies)	1985	400			100%					
	1984	22,000			100%					
	1983	22,000			100%					
	1982	22,000			100%					
(1980-Feb. 1985 used in all cooling towers)	1981	22,000			100%					
	1980	22,000			100%					
	1979	11,000			100%					
	1978	11,000			100%					
(1974-1980 used in one half of towers)	1977	11,000			100%					
	1976	11,000			100%					
	1975	11,000			100%					
	1974	11,000			100%					

CHEMICAL RELEASE DATA FORM

Chemical Name: Endcor 4622

Uses: Cooling Water Treatment

Solid _____ Liquid ☒ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

It will irritate eyes on contact and may irritate skin on prolonged contact.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation (2) rubber gloves, (3) chemical goggles, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Estimated Distribution in %							
			Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Encor 4622 (Dearborn Chem. Co.)	1980	28,000			100%					
	1979	28,000			100%					
	1978	28,000			100%					
	1977	28,000			100%					
	1976	28,000			100%					
	1975	28,000			100%					
	1974	28,000			100%					

CHEMICAL RELEASE DATA FORM

Chemical Name: Microbiotreat 321

Uses: Biocide

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Eye and skin irritant.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) rubber gloves, (3) chemical goggles, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Microbiotreat 321 (Dearborn Chem. Co.)	1980	11,000			100%					
	1979	11,000			100%					
	1978	11,000			100%					
	1977	11,000			100%					
	1976	11,000			100%					
	1975	11,000			100%					
	1974	11,000			100%					

CHEMICAL RELEASE DATA FORM

Chemical Name: HTH

Uses:

Solid _____ Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
HTH (Calcium Hypochlorite)	1973	300			100%					
	1972	300			100%					
	1971	300			100%					
	1970	300			100%					
	1969	300			100%					
	1968	300			100%					
	1967	300			100%					
	1966	300			100%					
	1965	300			100%					
	1964	300			100%					
	1963	300			100%					

CHEMICAL RELEASE DATA FORM

Chemical Name: Freons

Uses:

Solid _____ Liquid X Gas X .

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

High vapor concentrations may cause confusion, pulmonary irritation, tremors and rarely coma. These effects are transient.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Freons	1943-1981	17,000 Kg/year							100%*	
	1981-1985	17,000 Kg/year				100%				
	1986	4,000				100%				

*Poured on ground.
Unknown quantity
escaped to the air.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sulfur Dioxide

Uses:

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Toxic by inhalation. Strong irritant to eyes and mucous membranes. Dangerous air contaminant and constituent of smog.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Sulfur Dioxide	1955-1986	4,790,000 Kg/year		100%						

CHEMICAL RELEASE DATA FORM

Chemical Name: Indene

Uses:

Solid _____ Liquid ☒ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Low toxicity

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Indene (in preparation of pitch and/or carbon precursors)	1972	90	60			40				
	1971	551	45			55				
	1970	798	20			80				
	1969	483	20			80				
	1968	183	20			80				

CHEMICAL RELEASE DATA FORM

Chemical Name: Cinnamic Aldehyde

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Reactive compound, participating in oxidation, reduction, addition and polymerization reactions.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Estimated Distribution in %							
			Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Cinnamic aldehyde (pitch and carbon precursor)	1972	60	60			40				
	1971	238	60			40				

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethylene dibromide

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Toxic by inhalation, ingestion, or skin absorption. May be carcinogenic. Strong irritant to eyes and skin. Tolerance 20 ppm in air.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Ethylene Dibromide	1962	11,300		1			99			
	1961	11,300		1			99			

CHEMICAL RELEASE DATA FORM

Chemical Name: Urethane Resins

Uses:

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Toxic by ingestion.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

--
Source of Chemical Distribution Information/Accuracy:

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonium Carbonate

Uses:

Solid X Liquid Gas .

Listed as Toxic: Yes No .

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Respiratory irritant, source of ammonia.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

ALPHA PROCESS

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Ammonium Carbonate	1944	45,000			100*					
	1943	20,000			100					

*Discharged as ammonium nitrate.

CHEMICAL RELEASE DATA FORM

Chemical Name: 1,1,1 - Trichloroethane

Uses:

Solid _____ Liquid ☒ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

It is irritating to the eyes, mucous membranes, and in high concentrations, CNS depressant. Prolonged or repeated contact with skin results in transient erythema and defatting of skin. Mild liver and kidney dysfunction may occur transiently following recovery from CNS depression.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) rubber gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
1,1,1 Tri-chloroethane	1985	71,997		82		4				
	1984	85,467		97		3				
	1983	74,484		97		3				
	1982	56,836		97		3				
	1981	59,182		97		3				
	1979	50,898		97		3				

CHEMICAL RELEASE DATA FORM

Chemical Name: Polychlorinated biphenyls

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Produces furans or dioxins on ignition. Suspected carcinogen.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

--
Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Polychlorinated biphenyls in M-Wing coolant	1985	0				100%				
	1984	1.5				100%				
	1983	1.7				100%				
	1982	1.9				100%				
	1981	1.5				100%				
	1980	20.1				100%				

CHEMICAL RELEASE DATA FORM

Chemical Name: M. P. D. A. (M-phenelenediamine)

Uses:

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Strong irritant to skin. Toxic by inhalation.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
M-Phenylene Diamine (MPDA)	1983	307	99.9	0.1						
	1982	136	99.9	0.1						
	1979	307	99.9	0.1						
	1974	307	99.9	0.1						
	1971	409	99.9	0.1						

CHEMICAL RELEASE DATA FORM

Chemical Name: M. D. A. (Methylenedianiline)

Uses:

Solid X Liquid Gas .

Listed as Toxic: Yes No .

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Reported to cause toxic hepatitis.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Methylene Dianiline (MDA)	1984	91	99.9	0.1						
	1983	91	99.9	0.1						
	1982	91	99.9	0.1						
	1979	182	99.9	0.1						
	1974	273	99.9	0.1						

CHEMICAL RELEASE DATA FORM

Chemical Name: Carbon Disulfide

Uses:

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Highly flammable, dangerous fire and explosion risk. Poisonous. Tolerance 20 ppm in

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Estimated Distribution in %							
			Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Carbon Disulfide	1985	10.9		100%						
	1984	20.3		100%						
	1983	17.0		100%						
	1982	24.2		100%						

CHEMICAL RELEASE DATA FORM

Chemical Name: Methylene Chloride

Uses:

Solid _____ Liquid ☒ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts: Chronic exposure causes loss of appetite, memory loss and disturbance of balance. It is an irritant to the respiratory system and in high concentration causes pulmonary edema and pneumonitis, unconsciousness, coma and death. Acute oral exposure produces dizziness, drowsiness and unconsciousness. It is an irritant to skin and eyes and in high concentration may cause chemical burns of the skin. The liquid has a defatting action on the skin. Acute skin absorption may cause the same effect as ingestion.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) rubber gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Methylene Chloride	1985	8,924		100%						
	1984	10,022		100%						
	1983	11,311		100%						
	1982	13,497		100%						
	1981	1,314		100%						
	1980	1,890		100%						
	1979	1,888		100%						

CHEMICAL RELEASE DATA FORM

Chemical Name: Acetonitrile

Uses:

Solid _____ Liquid ☒ Gas _____

Listed as Toxic: Yes _____ No _____

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Acute inhalation exposure can produce nose and throat irritation, flushing, difficult breathing, chest pain, cyanosis, olfactory fatigue, cardiac and respiratory failure, coma and death. Oral exposure causes GI effects, difficult breathing, chest pain, irritation of mouth and throat, cyanosis and death. It can be absorbed through the skin and may cause similar effects. It is a skin and eye irritant.

Known or Suspected Environmental Impacts:

Biological effects have been reported in algae, protozoa, fathead minnows, bluegill and guppies.

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) rubber gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

USING THE CHEMICAL USAGE:

Estimated Distribution in %

[illegible]

CHEMICAL RELEASE DATA FORM

Chemical Name: Niobium Pentachloride

Uses:

Solid X Liquid Gas .

Listed as Toxic: Yes No .

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

May evolve toxic fume of HCL. Possible kidney injury from small dose.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Niobium Pentachloride	1971	10,000	34	66*						
	1970	16,300	34	66						
	1969	16,400	34	66						
	1968	16,400	34	66						
	1967	16,355	34	66						
	1966	10,000	34	66						
	1965	10,000	34	66						

*As HCl

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium Pentachlorophenate

Uses:

Solid _____ Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

It is a skin, eye, and upper respiratory irritant.

Known or Suspected Environmental Impacts:

It is soluble in water and under laboratory conditions has shown acute toxicity to bluegill, channel catfish, rainbow trout and other aquatic organisms.

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include (1) adequate ventilation, (2) gloves, (3) safety glasses, (4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Sodium Penta-chlorophenate in isopropanol (Calgon Chem. Co. or Nalco Chem. Co.)	1973	28,000			100%					
	1972	28,000			100%					
	1971	28,000			100%					
	1970	28,000			100%					
	1969	28,000			100%					
	1968	28,000			100%					
	1967	28,000			100%					
	1966	28,000			100%					
	1965	28,000			100%					
	1964	28,000			100%					
	1963	28,000			100%					

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium Hydroxide

Uses:

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts: Chronic exposure to dusts may cause ulceration of nasal passages. Acute inhalation exposure causes upper respiratory tract irritation. Eye contact can result in damage to the cornea, conjunctiva and episcleral tissues. If skin is wet, edema and necrosis can occur. Ingestion can cause corrosion of tissue, vomiting, prostration, and collapse.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection: Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: (1) adequate ventilation, (2) rubber clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

For the following chemicals, no descriptive data was located.

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Epoxy Resin (diglycidyl ether of bis phenol A)	1985	813	98			2				
	1984	1,481	98			2				
	1983	1,788	98			2				
	1982	1,127	98			2				
	1981	939	98			2				
	1980	147	98			2				
	1979	1,533	98			2				
	1977	1,364	98				2			
	1976	-								
	1975	2,273	98				2			

STANDARD CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Ammonium Thiocyanate	1953	45,000			2*		98			
	1952	405,000			2		98			
	1951	405,000			2		98			
	1950	45,000			2		98			
*Discharged in ammonium chloride solution.										

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Estimated Distribution in %							Ashpond & Rogers Quarry Other	Unknown
				Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial				
Ash (Bottom and Fly)	1955-1962	19,200,000 Kg/year		50%							50% to pond only	
	1963-1967	19,200,000 Kg/year		50%							50%	
	1962-1984	19,200,000 Kg/year		20%							80%	
	1985	19,200,000 Kg/year		10%							90%	
	1986	4,800,000		1%							99%	

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Pitch	1971	378	90				10			
	1970	451	90				10			
	1969	8629	80				20			

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (Kg)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Oracol PL (Betz Chem. Co.) (Chromate Additive)	1973	19,000			100%					
	1972	19,000			100%					
	1971	19,000			100%					
	1970	19,000			100%					
	1969	19,000			100%					
	1968	19,000			100%					
	1967	19,000			100%					
	1966	19,000			100%					
	1965	19,000			100%					
	1964	19,000			100%					
	1963	19,000			100%					

Y-12
HISTORICAL REVIEW URANIUM
CONTAMINATED SCRAP HANDLING

Day 1 -- 1948
Scrap buried.

1948 to 1955
Scrap was stored in White Wing holding yard. The material was sold to Witherspoon.

1955 to present
Scrap taken to west end of Y-12 and stored.

The material was stored at Y-12 from 1955 until Oak Ridge Processing Company, Inc. started smelter operations. The smelter processed copper starting February, 1957 and started steel smelter in August 1957. The Company smelted contaminated scrap accumulated from 1955 until the smelter closed down in May 1960.

Witherspoon began purchase of the contaminated scrap in September 1963 for remelt at Knoxville Iron Smelter Plant. This contract was terminated December 1964, after a total of 2,856 tons was purchased.

Scrap was then accumulated in the yards and sold as follows:

<u>Date</u>	<u>Tonnage</u>	<u>Purchaser</u>
March, 1968	440	D. D. Smith
September, 1968	550	Witherspoon
April, 1970	782	Witherspoon
June, 1972	751	D. D. Smith

SCRAP SALES

9/63-2/64	2005 G.T. U Contaminated Scrap	David Witherspoon
2/64-12/64 (719)	851 G.T. U Contaminated Scrap	David Witherspoon
7/15/64 (743)	8000# Beryllium Scrap	Unknown
10/74 (754)	23,000# Nickel Scrap	Lee Metals Corp.
	32,780# Lead Covered Cable	Twin City Iron and Metal Co.
2/23/65 (773)	12,500# Lead	Karl Nussbaum and Son, Inc.
	7,500# Nickel	Lee Metals Corp.
3/9/65 (777)	Nickel Scrap	Allied Metal Co.
	Monel Scrap	Allied Metal Co.
4/28/65 (781)	6,017# Beryllium Chips	Unknown
5/10/65 (782)	11,700# Ethylene Dibromide	Unknown
8/19/65 (800)	Lead	Twin City Iron and Metal Company, Inc.
	Lead Covered Cable	Brodey & Brodey, Inc.
10/8/65 (817)	19,489# Beryllium Chips and Powder	Unknown
12/6/65 (822)	2,100# Lead Covered Cable	David Witherspoon
	58,000# Nickel Plate, Hg. Contam.	Samuel G. Keywell, Company, Inc.
	223,700# Mixed Metal, Hg. Contam.	
	613,160# Scrap Metal, Hg. Contam.	
	59,500# Nickel, Hg. Contam.	Samuel G. Keywell, Company, Inc.
	153,700# Structural Steel, Hg. Contam.	David Witherspoon
	32,000# Pipe, Valves, etc., Hg. Contam.	Knoxville Junk Co.
1/14/66 (826)	2,108,000# Mixed Metal, Hg. Contam.	Knoxville Junk Co.
	96,600# Nickel Scrap, Hg. Contam.	Frankel Co., Inc.
2/9/66 (828)	11,700# Ethylene Dibromide	Unknown
4/26/66 (840)	18,032# Beryllium Chips & Powder	Unknown
5/13/66 (841)	5,100# Lead Encased in S.S.	David Witherspoon
	87,000# Al. Scrap, Hg. Contam.	M. Kimerling and Sons, Inc.
	92,500# Stainless Steel Scrap, Hg. Conta.	Samuel G. Keywell Company, Inc.
	21,500# Bare Brass Scrap, Hg. Contam.	M. Kimerling and Sons, Inc.
	104,000# Nickel Scrap, Hg. Contam.	Wolverine Metal Co.
	101,000# Nickel Plates, Hg. Contam.	Stainless Processing Company
	280,800# Scrap Pipe, Hg. Contam.	Karl Nussbaum and Sons, Inc.
	25,000# Scrap Instruments, Hg. Contam.	Twin City Iron and Metal Co., Inc.
	19,500# Lead Scrap	Twin City Iron and Metal Co., Inc.
	178,603# Mixed Metal Scrap, Hg. Contam.	Pits Scrap Iron and Metal Company
7/6/66 (849)	209,000# Scrap Nickel Plate, Hg. Contam.	Lee Metals Corp.
	2,000,000# Mixed Metals, Hg. Contam.	Hunsaker Iron and Metal Company

	67,500# Copper Scrap, Hg. Contam.	Lee Metals Corp.
	43,500# Copper Scrap, Hg. Contam.	Richelson Iron and Metal Company
2/7/67 (874)	12,500# Lead Covered Cable	David Witherspoon
	74,000# Al Bus Bar, Hg. Contam.	Berman Brothers Iron & Metal Co., Inc.
	99,000# Al Scrap, Hg. Contam.	Metropolitan Metals, Inc.
	97,000# Bare Copper Scrap, Hg. Contam.	Commercial-London, Inc.
	37,000# Insulated Copper Scrap, Hg. Contam.	David Witherspoon
	21,000# Mixed Brass & Bronze Scrap, Hg. Contam.	Chicago Metals Corp.
	4,300# Nickel Scrap, Hg. Contam.	U.S. Reduction Co.
	133,000# Stainless Steel Scrap, Hg. Contam.	Wolverine Metal Co.
4/3/67 (882)	1 Lot Depleted Uranium Oxide	McGean Chemical Co.
4/27/67 (883)	40,320# Depleted Uranium Oxide	Unknown
10/24/67 (910)	2,700,000# Mixed Scrap Metal, Hg. Contam.	Rockwood Iron and Metal Company
	137,000# Scrap Pipe, Hg. Contam.	Richelson Iron and Metal Company
	67,000# Bare Copper Scrap, Hg. Contam.	Knoxville Junk Co.
	120,000# Aluminum Scrap, Hg. Contam.	Lee Metals Corp.
	61,000# Copper Scrap, Hg. Contam.	Lee Metals Corp.
	28,000# Bare Brass Scrap, Hg. Contam.	Lee Metals Corp.
	11,000# Mixed Copper & Ferrous Scrap, Hg. Contam.	David Witherspoon
	36,000# Aluminum Bus., Hg. Contam.	Berman Brothers Iron and Metal
	2,070# Nickel Scrap	Wolverine Metal Co.
	3,540# Monel Scrap	Wolverine Metal Co.
	21,000# Lead Scrap	David Witherspoon
11/21/67 (921)	40,200# Depleted Uranium Oxide	Unknown
2/27/68 (932)	5,896# Beryllium Chips	Brush Beryllium Co.
	3,007# Beryllium Chips	The Beryllium Corp.
3/5/68 (933)	600 G.T. U Contaminated Scrap	David Witherspoon
	402 G.T. U Contaminated Mixed Metal Scrap	Unknown
4/2/68 (942)	40,200# Depleted Uranium Oxide	McGean Chemical Co.
4/17/68 (946)	1 Lot Lead Covered Cable	David Witherspoon
	73,000# Insulated Copper Scrap, Hg. Contam.	Richelson Iron and Metal Company
	40,000# Bare Copper Scrap, Hg. Contam.	M. Kimerling and Sons, Inc.
	105,000# Aluminum Scrap, Hg. Contam.	David Witherspoon
	175,000# Stainless Steel Scrap, Hg. Contam.	Mercer Alloys Corp.

6/12/68 (956)	16,038g. Rare Earths	Research Chemical
8/1/68 (964)	39,600# Depleted Uranium Oxide	McGean Chemical Co.
8/13/68 (967)	3,239# Beryllium Oxide	Brush Beryllium Co.
9/17/68 (984)	851,000# U Contaminated Carbides	David Witherspoon
	134,000# U Contaminated Diffusion Pumps	David Witherspoon
	77,400# U Contaminated Transformers and Rectifiers	David Witherspoon
	80,000# U Contaminated Dollies and Jacks	David Witherspoon
	90,000# U Contaminated Scrap Metal	David Witherspoon
10/3/68 (989)	289# Niobium Pentachloride	Unknown
11/7/68 (991)	1,360,000# Mixed Scrap Metal, Hg. Contam.	Knoxville Junk Co.
	3,190# Nickel Scrap	Wolverine Metal Company, Inc.
	11,800# Lead Covered Cable Scrap	David Witherspoon
1/21/69 (999)	40,200# Depleted Uranium Oxide	McGean Chemical Co.
3/19/69 (1006)	39,600# Depleted Uranium Oxide	McGean Chemical Co.
5/8/69 (1012)	80,400# Depleted Uranium Oxide	McGean Chemical Co.
5/13/69 (1013)	12,900# Lead Covered Cable	Lee Metal Corp.
	644.4 G.T. Mixed Scrap Metal, Hg. Contam.	East Tennessee Iron and Metal Co.
9/23/69 (1030)	951# Niobium Pentachloride	Alfa Inorganics, Inc.
10/1/69 (1033)	2,930,000# Mixed Scrap Metal, Hg. Contam.	Rockwood Iron and Metal Company
	380# Beryllium Compounds	Unknown
10/15/69 (1035)	40,200# Depleted Uranium Oxide	Chemetron Corporation
10/22/69 (1040)	1,760,910# Mixed Scrap Metal, Hg. Contam.	Rockwood Iron and Metal Company
12/10/69 (1042)	2,800# Nickel Scrap	Wolverine-Sitkin Alloys, Inc.
	4,300# Lead Covered Cable Scrap	Knox Metals Corp.
	14,500# Lead Scrap	Lee Metals Corp.
	1,700# Monel Scrap	Wolverine-Sitkin Alloys, Inc.
2/18/70 (1048)	1 Lot Nitric Acid	David Witherspoon
2/26/70 (1056)	9,675# Nickel Ingots	H. Klaff and Company
3/24/70 (1062)	2 Lots Nickel Ingots	Mercer Alloys Corp.
4/15/70 (1067)	39,269# Nickel Ingots	Lee Metals Corp.
4/16/70 (1069)	40,200# Depleted Uranium Oxide	Chemetron Corp.
5/12/70 (1072)	600 G.T. U Contaminated Scrap Metal	David Witherspoon
9/15/70 (1088)	500# U Contaminated Scrap Metal	David Witherspoon
1/27/71 (1095)	1 Lot Nickel Sulfamate	DuPont Smith
11/16/71 (2047)	200 G.T. U Contaminated Scrap Metal	I. Deutch & Sons
	3,000# Monel Scrap	Commercial Metals Company
2/23/72 (2064)	6,000# Nickel Scrap	S. G. Keywell, Company, Inc.
	1,675# Monel Scrap	Tecmet, Inc.

	3,000# Lead Covered Copper Scrap	Knox Metals, Corp.
	46,500# Lead Scrap	Lee Metals, Corp.
	1,520# Zirconium	Wolverine-Sitkin Alloys, Inc.
5/17/72 (2085)	6 Lots Mercury Contaminated Material	Mallory Battery Co.
7/18/72 (2100)	700 G.T. U Contaminated Mixed Metal	DuPont Smith
8/21/73 (2134)	21,080# Lead Scrap	Unknown
	19,700# Nickel Scrap	Unknown
	2,620# Lead Covered Cable Scrap	Unknown
	520# Zirconium Scrap	Unknown
7/17/74 (2181)	890# Nickel Scrap	Commercial Metals Co.
	29,280# Lead Covered Cable Scrap	Unknown
8/1/74 (2177)	23 Lots Scrap Beryllium	Multiple Buyers
8/26/75 (2232)	4,600# Lead Scrap	Unknown
7/13/77 (2302)	3,070# Monel Scrap	Unknown
3/22/79 (2405)	440 Gallons Benzene	Unknown
1/29/80 (2451)	10 Lots Beryllium	Unknown
12/10/81 (2575)	1 Lo Lead Scrap	David Witherspoon

ChemRisk Document Request Transmittal Form

(This section to be completed by ChemRisk)

Name S Sandberg Division CEP is requested to provide the following document

Address _____

Date of Request 1/25/93 Expected receipt of document _____Title of requested document Historic Chemical Release Report for
Oak Ridge National Laboratory (ORNL)Document Number Unnumbered/603752Access Number of Document _____ Date of Document 4-25-86

(This section to be completed by Derivative Classifier)

Derivative Classifier Sara L. Welch Phone 4-7864Date document transmitted to Dr. Quist 01/29/93Date release received from Dr. Quist 2/2/93

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DOCUMENT DESCRIPTION (to be completed by requester)

Document number Unnumbered / 603752 Pages 1
 Document title Historic Chemical Release Report for Oak Ridge National Laboratory (ORNL)
 Author(s) (indicate other divisions or organizations, if applicable) PS Rower

Document type (See Doc. Prep. Guide, Chs. 1 and 2, for definitions of document types):

- ☐ Formal Report ☐ Progress Report ☐ Informal R&D Report ☐ Abstract ☐ Drawing
☐ Administrative ☒ Correspondence ☐ Internal Technical Data ☐ Photo ☐ Other Visuals
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Will oral presentation be published in program, booklet, brochure, etc.? ☐ Yes ☐ No ☐ Not Known

Will copies of the oral presentation be distributed ☐ before, ☐ after, ☐ during the meeting? ☐ No distribution will be made.

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DOCUMENT NUMBER: UNNUMBERED/G03752

DOCUMENT TITLE: HISTORICAL CHEMICAL LISTING - ORNL

AUTHORS:

DOCUMENT TYPE: ATTACHMENT 1

DOCUMENT DATE:

PURPOSE OF RELEASE: HEALTH STUDY FEASIBILITY REPORT

COPY RIGHTED MATERIAL: NO

DOCUMENT NUMBER: UNNUMBERED/G03752

DOCUMENT TITLE: ORNL SURPLUS CHEMICAL SALES AND TRANSFERS

AUTHORS:

DOCUMENT TYPE: ATTACHMENT 2

DOCUMENT DATE:

PURPOSE OF RELEASE: HEALTH STUDY FEASIBILITY REPORT

COPY RIGHTED MATERIAL: NO

JR

Internal Correspondence

MARTIN MARIETTA ENERGY SYSTEMS, INC.

April 25, 1986

C. G. Jones, 1000, 211A, MS 214A (4-9969)

Historic Chemical Release Report for Oak Ridge National Laboratory (ORNL)

Reference: Correspondence from R. L. Egli to W. F. Furth, "Historic Chemical Release Report," dated January 6, 1986

As I indicated to you earlier, we have not been able to complete the subject report for ORNL by the requested deadline of April 25. Historically, the research activities of the Laboratory have utilized numerous chemicals. Because of this wide array of chemicals, it has proven to be a time consuming task to sort through available records in order to identify the historic use and disposition of toxic chemicals with the greatest potential for environmental or public health impacts, as well as the large quantity materials.

At this time we are providing a portion of the requested information. Enclosed is a listing of chemicals and their quantities which have been identified to be included in the ORNL report (Attachment 1). A Chemical Release Data Form and the Estimated Chemical Usage Form will be completed for each of the chemicals on this list. Also enclosed is a summation of ORNL surplus chemical sales and other related activities (Attachment 2).

Our current plans are to provide the completed forms referenced above, and other pertinent information on or before May 9, 1986. I hope this delay does not cause any inconvenience to you. If there are any questions, please call.

P. S. Rohwer/aw

P. S. Rohwer, 4500S, G-260, ORNL (4-6670)

PSR:BME:871N:aw

cc/enc: B. M. Eisenhower
D. C. Parzyck

APPROVAL FOR RELEASE

Unnumbered 1-page ltr, PS Rohwer to CG
Document: # Jones "Historic Chemical Release Report for ORNL," dtd 4/25/86; 16-
Title/Subject pages attachment.

Approval for unrestricted release of this document is authorized by the Oak Ridge K-25 Site Classification and Information Control Office, Martin Marietta Energy Systems, Inc., PO Box 2003, Oak Ridge, TN 37831-7307.

Orvin D. Zwislocky
K-25 Classification & Information Control Officer*2/2/93*
Date

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ATTACHMENT 1

Historical Chemical Listing - ORNL

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<u>Chemical</u>	<u>Quantity*</u>
Acetone	83,789 L
Acetonitrile	135,594 L
Acrylamide	1,389 kg
Aluminum nitrate	7,455 kg
Ammonia, anhydrous	20,580 kg
Ammonium bifluoride	657 kg
Ammonium hydroxide	8,800 kg
Ammonium nitrate	4,445 kg
Asbestos-Containing Materials	
Asbestos Felt Roofing	8,627 m ²
Asbestos Sheet Roofing	6,399 m ²
Asbestos Tape	246 rolls
Asbestos Insulated Wire	1,649 m
Asbestos Gaskets	17,453 ea
Asbestos Packing	1,838 m ²
	971 kg
Barium octahydrate	1,918 kg
Baygon (N-Methyl carbamate)	15 L
Benzene	2,589 L
Cadmium nitrate	183 kg
Calcium hypochlorite	7,297 kg
Carbon monoxide	267 m ³
Carbon tetrachloride	1,499 L
Chlordane	189 L
Chlorine, gas	9,692 kg
Chloroform	1,067 L
Chlorpyrifos (Bolt)	136 L
Chromic acid	8,482 L
Coal-oil mixture	18,925 L
Coal Tar Pitch	22,014 L
Cyclohexane	386 L
Diazinon	19 L
2,4-Dichloropenoxy acetic acid	189 L
Diethyl benzene	2,185 kg
Diethylenetriamine pentacetic sodium salt	545 kg
1,4-Dioxane	155 L
Disulfoton (Disyston G)	5 kg
Dodecane	3,142 L
Endcor (Mixture of sodium salt organo-phosphoric acid and Merceptobenzotriazolo)	10,825 L
Epoxy Resins	447 L
Ethyl acetate	1,787 L
Ethyl alcohol	46,749 L
Ethyl alcohol, denatured	15,083 L
Ethyl ether	3,064 kg
Ethylene glycol	114,421 L
Ethylene oxide	100 kg
Ferric chloride	4,924 kg
Ferric sulfate	1,000 kg
Formaldehyde	1,177 L
Formamide	469 L

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<u>Chemical</u>	<u>Quantity*</u>
Hexane	6,491 L
Hydrochloric acid	2,633,145 L
Hydrofluoric acid	6,884 kg
Hydrogen peroxide	12,463 kg
Isopentane	409 L
Isopropyl alcohol	79,228 L
Kelthane (4,4'-Dichloro- α -trichloromethyl benzhydrol)	19 L
Lacquer thinner	48,770 L
Lasso (2-Chloro-2'6'-diethyl-N- Methoxymethyl acetanilide	9 L
Lead, sheet	30,551 kg
Lindane	< 1 kg
Magnesium nitrate	830 kg
Malathion	242 L
Mercury	1,687 kg
Methyl alcohol	843,199 L
Methyl ethyl ketone	10,008 L
p,p' Diaminodiphenylmethane	91 kg
Methylene chloride	67,403 L
Metex Stripper	3,345 kg
Micro-Bio-Treat (Mixture of n-alkyl dimethyl benzyl ammonium chloride and Bis [Tri-n- butyltin] oxide)	5,072 L
Naphtha	24,565 L
Nickel chloride	4,805 kg
Nickel sulfate	2,590 kg
Nitric acid	112,191 L
Nitric oxide	20 m ³
Orthene (Acetylphosphoramidothioic acid - O,5-dimethyl ester)	4 kg
Pararosaniline	83 L
Pentane	382 L
Perchloric acid	2,017 kg
Petroleum ether	1,506 L
Phenol	242 kg
Phenolic resin	91 kg
Phosphoric acid	9,190 kg
Polychlorinated biphenyls	-
Potassium cyanide	200 kg
Potassium hydroxide	557,677 kg
Pramitol	277 kg
Pyridine	159 L
Ronstar	455 kg
Round-up (N-Phosphonomethyl glycine isopropylamine salt)	231 L
Silicon tetrafluoride	3,125 kg
Silvex	284 L
Sodium bifluoride	6,455 kg
Sodium cyanide	2,370 kg
Sodium dithionite	807 kg
Sodium hexametaphosphate	455 kg

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<u>Chemical</u>	<u>Quantity*</u>
Sodium hydroxide	394,646 kg
Sodium nitrate	70,256 kg
Sodium sulfide	500 kg
Subdue E2	4 L
Sulfur hexafluoride	7,214 kg
Sulfuric acid	45,965 L
Talon (4'-Bromo (1,1'-biphenyl-4-yl)	68 kg
Tetrachloroethylene	2,147,321 L
Tetrahydrofuran	2,010 L
Toluene	9,281 L
Tributyl phosphate	5,934 kg
Trichloroethylene	49,148 L
Trichloromethylsilane	57 kg
Triethanolamine	92 kg
Urethane	984 L
Varsol	181,218 L
Vydate	23 L
Xylene	1,692 L
	54 kg

*Quantities were determined from the survey of purchase requisitions for chemical purchases and ORNL Chemical Stores issues using ORNL account numbers.

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ATTACHMENT 2

ORNL Surplus Chemical Sales and Transfers

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ORNL Waste Oil Sold for Recycle

<u>Date</u>	<u>Quantity (liters)</u>	<u>Off-site Buyer</u>
FY 1980	37,850	Petroleum Recycling Corp.
FY 1981	39,364	Alpha Recovery Systems, Inc.
FY 1982	25,738	Petroleum Recycling Corp.
FY 1983	8,176	Universal Oil & Supply Co.
FY 1984	71,468	Alpha Recovery Systems, Inc.
FY 1985	7,949	Universal Oil & Supply Inc.
	18,168	Alpha Recovery Systems, Inc.
Total	208,713	

All wastes oils are analyzed for PCBs, organics, and radioactivity prior to being placed in the Waste Oil Storage Tank.

Waste Acceptance Criteria:

PCB	<2 ppm
Organics	<50 ppm
Gross beta	1.1×10^{-2} Bq/mL
Gross gamma	1.1×10^{-2} Bq/mL
^3H	1.1×10^3 Bq/mL
^{14}C	3×10^2 Bq/mL

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Surplus Chemicals Transferred to Other Government Agencies

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>	<u>Receiving Agency</u>
6/79	Iodic acid	1 kg	Department of General Services
	Nickelous sulfate	4 kg	
	Potassium chromate	9 kg	
	Potassium permanganate	23 kg	
	Hardening resin	57 g	
	Argon	6 L	
6/80	1-Amino-8-naphthol-4-sulfonic acid	1000 g	Comparative Animal Research Laboratory
	Benzoic anhydride acid	100 g	
	1-Naphthylamine-4-sulfonic acid	25 g	
	1-Naphthylamine-8-sulfonic acid	1 kg	
	Benzyl acetate	2 kg	
	2,4-Dichloro-1-Naphthol	100 g	
	2,3-Dichloronaphthoquinone	25 g	
	2,7-Dihydroxynaphthalene	50 g	
	A-Fluoronaphthalene	50 g	
	A-Naphthonitrile	10 g	
	B-Naphthylamine hydrochloride	50 g	
	A-Naphthylhydrazine hydrochloride	75 g	
	6-Nitroquinoline	40 g	
7/80	o-Cresotinic acid	100 g	Comparative Animal Research Laboratory
	2,4-Dinitro-1-naphthol-7-sulfonic acid	25 g	
	P-Fluorobenzoic acid	5 g	
	8-Hydroxy-5-quinoline sulfonic acid	100 g	
	7-Iodo-8-hydroxyquinoline-5-sulfonic acid	100 g	
	A-Naphthaleneacetic acid	100 g	
	B-Naphthoxyacetic acid	25 g	
	S-Nitrobarbituric acid	25 g	
	B-Oxynaphtholic acid	50 g	
	Quinaldinic acid	25 g	
	Violuric acid	25 g	
	1-Amino-2-naphthol hydrochloride	25 g	
	2-Aminonaphthoquinone	5 g	
	2-Chloroquinoline	25 g	
	6-Chloroquinoline	25 g	
	Decahydroquinoline	25 g	
	5,7-Dibromo-8-hydroxyquinoline	35 g	

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Surplus Chemicals Transferred to Other Government Agencies

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>	<u>Receiving Agency</u>
7/80	2,4-Dibromo-1-naphthol	25 g	
cont.	9,10-Dichloroanthracene	25 g	
	3,5-Dimethylpyrozole	25 g	
	2,7-Dinitrophenanthra- quinone	1 g	
	2,4-Dioxothiazolidine	25 g	
	N-Methyl-2-quinoline	25 g	
	5-Nitro-1-naphthylamine	5 g	
	2-Nitrophenanthraquinone	5 g	
	8-Nitroquinoline	10 g	
8/80	1 lot (507 items) of miscellaneous chemicals classified as DOT Flammable liquid, n.o.s. and poisonous solid, n.o.s.		University of Tennessee, Knoxville via the Department of General Services
7/83	Potassium nitrite	16 kg	Georgia Coastal Plain Experimental Station, Tifton, GA
12/85	Ethyl Alcohol	11 drums	University of Tennessee, Knoxville via the Department of General Services
3/86	Hydraulic fluid, non-petroleum base	2 drums	Roane State Community College via the Department of General Services
	Hydraulic fluid	371 L	
	Gulf, oil	98 containers	
	Marcol, oil	2 drums	
	Shell Hydraulic oil	2 drums	
	Isopropanol	2 drums	

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Surplus Chemicals Transferred to ORGDP Property Sales

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
2/84	Sulfuric acid	16 kg
11/84	o-Aminophenol-p-sulfonic acid	5 kg
	Thioglycolic acid	200 g
	p-Anisidine acetyl	400 g
	o-Toluidine acetyl	2 kg
	Dibromopropyl alcohol	1 kg
	Cyanoacetanilide	100 g
	Resorcinol monomethyl ether	75 g
	Furil dioxime	20 g
	Heptoyl chloride	300 g
	2-Hydroxy-1,4-Dimethyl benzene	250 g
	Methyl bromobenzoate	525 g
	Methyl-p-aminophenol sulfate	200 g
	Myristoyl chloride	100 g
	P-Naphthol benzein	25 g
	o-Nitrophenetole	100 g
	P-Nitrophenetole	100 g
	P-Nitrophenylhydrazine	75 g
	P-Nitrophenylhydrazine hydrochloride	100 g
	P-Nitrosophenol sodium salt	125 g
	Palmitoyl chloride	25 g
	G-Phenylpropyl bromide	100 g
	Phloroglucinol	150 g
	Propionamide	200 g
	Tetra-N-Butylammonium iodide	400 g
	Thio-B-Naphthol	50 g
	Toluhydroquinone	250 g
	P-Tolyl isocyanate	25 g
	Trimethylamine	250 g
	Trimethylene bromide	200 g
	Trimethylene chlorohydrin	25 g
	Xanthydrol	20 g
	o-xylose	275 g
5/85	Lead carbonate	10 kg
	Potassium bromide	25 g
	Sodium acetate	30 kg
	Sodium peroxide	5 kg
	Tantalum pentoxide	1 kg
	Adipic acid	1 kg
	o-Aminobenzenesulfonic acid	125 g
	D-10-Camphorsulfonic acid	100 g
	Chloroacetic acid	2 kg
	3,5-Dinitrobenzoic acid	100 g
	Iodoacetic acid	25 g
	B-Iodopropionic acid	25 g

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Surplus Chemicals Transferred to ORGDP Property Sales

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
5/85	Naththalene-B-sulfonic acid	200 g
cont.	A-Naphthoic acid	25 g
	o-Toluic acid	800 g
	p-Toluic acid	3 kg
	Undecylenic acid	500 g
	Acenaphthene	200 g
	Allyl formate	100 g
	m-Aminophenol	200 g
	o-Aminophenol	100 g
	p-Aminophenol	500 g
	p-Aminophenol hydrochloride	200 g
	Tert-Amylbenzene	50 g
	n-Amyl bromide	400 g
	o-Anisidine	100 g
	p-Anisidine	100 g
	Anthraquinone	250 g
	Azoxybenzene	100 g
	Benzil	200 g
	Benzyl chloride	2 kg
	A-Bromo-acetophenone	200 g
	Bromobenzene	10 g
	Bromomesitylene	200 g
	o-Bromophenol	50 g
	2-Bromopyridine	100 g
	o-Bromotoluene	50 mL
	Tert-butylbenzene	25 g
	N-Butyl bromide	250 g
	Isobutyl chloride	200 g
	Isocaproyl chloride	50 g
	Cetyl bromide	200 g
	Cetyl iodide	100 g
	o-Chloroaniline	500 g
	p-Chloroaniline	100 g
	A-Chloromethylnaphthalene	500 g
	Crotonaldehyde	500 g
	Cyanoacetamide	200 g
	1,2,5,6-Dibenzanthracene	1 g
	9,10-Dibromoanthracene	50 g
	N-Dibutylamine	5 kg
	Di-n-butyl Ketone	25 g
	Dicyandiamide	1 kg
	Diethyl Ketone	3 kg
	Dimethylbenzylamine	200 g
	AS-Diphenylhydrazine hydrochloride	25 g
	Di-p-tolyl Ketone	25 g
	Petroleum ether	8 L
	Ethyl anisate	100 g
	Ethyl anthranilate	100 g
	Ethyl B-Bromopropionate	100 g

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Surplus Chemicals Transferred to ORGDP Property Sales

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
5/85	Ethylene chlorobromide	500 g
cont.	Ethylene chloride	8 kg
	Ethyl fumarate	1 kg
	Ethyl maleate	2 kg
	Ethyl orthoformate	250 g
	Lauryl bromide	700 g
	Methyl anthranilate	3 kg
	Methyl bromoacetate	400 g
	Methyl N-butylcarbinol	25 g
	Methyl N-butyrate	200 g
	o-Methylhydroxylamine hydrochloride	100 g
	Methyl malonate	500 g
	Methyl B-naphthyl Ketone	200 g
	Myristyl bromide	600 g
	m-Nitroaniline	100 g
	o-Nitroaniline	200 g
	4-Nitro-1,2-Diaminobenzene	100 g
	p-Nitrofluorobenzene	25 g
	Nitron	100 g
	1-Nitroso-2-napthol	100 g
	o-Nitrotoluene	3 kg
	p-Nitrotoluene	250 g
	Phenanthraquinone	25 g
	Phenetole	500 g
	Phenylbenzylcarbinol	25 g
	m-Phenylenediamine	250 g
	DL-A-Phenylethylamine	100 g
	DL-Phenylmethylcarbinol	5 kg
	Picoline	500 g
	Propiophenone	1000 g
	Iso-propylamine	8 kg
	Iso-propyl iodide	100 g
	Quinone	2 kg
	Trans-Stilbene	300 g
	Strychnine sulfate	200 g
	Succinonitrile	200 g
	Sucrose	150 g
	m-Tolunitrile	25 g
	o-Tolunitrile	25 g
	p-Tolunitrile	100 g
	N-Valeronitrile	100 g
	Bromocresol green	5 L
	Buffer solution	64 L

Surplus Chemicals Transferred to Environmental Management for Disposal

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
6/80	4-Iodo-n-xylene	250 g
8/81	Silicic acid	2 kg
	Sulfuric acid	3 kg
	Ammonium thiocyanate	3 kg
	Calcium chloride	25 kg
	Sodium methylate	2 kg
	Yttrium, metal	30 g
	2-Amino-5-chlorobenzoic acid	25 g
	1-Amino-2-naphthol-4-sulfonic acid	75 g
	o-Aminophenol-p-sulfonic acid	4 kg
	B-Bromopropionic acid	25 g
	m-Chlorobenzoic acid	75 g
	Chlorosulfonic acid	2 kg
	3-Hydroxy-2-naphthoic acid	25 g
	1-Malic acid	450 g
	DL-Mandelic acid	1 kg
	Methoxyacetic acid	100 g
	o-Methoxybenzoic acid	100 g
	3-Nitrosalicylic acid	125 g
	5-Nitrosalicylic acid	10 g
	A-Oxynaphthoic acid	40 g
	Salicylacetic acid	100 g
	Salicylic acid	2 kg
	Trimethylacetic acid	200 g
	Acetamide	1 kg
	Allylthiourea	100 g
	N-Amyl chloride	100 g
	Tert-Amyl chloride	600 g
	Benzyl bromide	200 g
	Benzyl chloride	250 g
	o-Bromotoluene	1 kg
	sec-Butyl bromide	100 g
	N-Butyl-p-toluenesulfonate	125 g
	Chloroacetdiethylamide	25 g
	Chloroacetonitrile	200 g
	Chloroacetyl chloride	100 g
	A-Chloronaphthalene	3 kg
	2-Chloropyridine	100 g
	Cinchonine, alkaloid	50 g
	o-Cresyl-p-toluenesulfonate	200 g
	Dicyclohexylamine	1 kg
	Ethyl bromo-n-butyrate	150 g
	Ethyl bromo-n-caproate	75 g
	Ethyl chloroacetate	250 g
	Ethyl naphthylamine	100 g
	m-Fluorochlorobenzene	25 g
	m-Fluorotoluene	25 g
	o-Fluorotoluene	100 g

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Surplus Chemicals Transferred to Environmental Management for Disposal

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
8/81 cont	2-Iodo-1,3-dimethylbenzene	10 g
	Methyl adipate	100 g
	Methyl bromopropionate	300 g
	Methyl orthoacetate	600 g
	6-Methylquinoline	25 g
	8-Methylquinoline	50 g
	Methyl toluate	< 1 kg
	Naphthyl acetate	100 g
	p-Nitroacetanilide	75 g
	A-Nitronaphthalene	400 g
	m-Nitrophenol	25 g
	Phenylethyl bromide	300 g
	Phenylhydrazine	500 g
	DL-Phenylmethylcarbinol	9 kg
	Phenyl-p-tolyl ketone	300 g
	Pinacol	500 g
	Propiophenone	3 kg
	N-propyl carbonate	100 g
	Propylene glycol	8 L
	Thionaphthol	225 g
	Ethyl bromopropionate	100 g
	Glycine anhydride	75 g
7/82	Hydrofluosilicic acid	3 kg
	Cadmium metal	113 g
	Calcium chloride	11 kg
	Lead sulfate	1 kg
	Magnesium sulfate	16 kg
	Potassium thiocyanate	3 kg
	A-Bromo-n-valeric acid	50 g
	o-Chlorobenzoic acid	100 g
	Trans-Cinnamic acid	300 g
	2,4-Dinitrobenzene sulfonic acid	10 g
	Mucic acid	< 1 kg
	Naphthalic anhydride acid	100 g
	m-Toluic acid	2 kg
	Trichloroacetic acid	5 kg
	Diacetone alcohol	250 g
	Myristyl alcohol	50 g
	Phenylethyl alcohol	1 kg
	Phenylpropyl alcohol	100 g
	2-Aminopyrimidine	300 g
	Iso-amyl bromide	100 g
	N-Amyl iodide	300 g
	Benzalacetone	300 g
	Benzidine dihydrochloride	28 g
	Bromoacetyl bromide	300 g
	Bromocyclohexane	200 g
	N-Butyl bromide	15 kg

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Surplus Chemicals Transferred to Environmental Management for Disposal

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
7/82	N-Butyl sebacate	500 g
cont.	Cellulose acetate	1 kg
	Cellulose triacetate	500 g
	m-Chlorophenol	25 g
	o-Chlorophenol	1 kg
	Di-n-butylaniline	300 g
	p-Diethylaminobenzaldehyde	25 g
	Diethyl-A-naphthylamine	25 g
	Ethyleamine hydrochloride	200 g
	Ethyl bromoacetate	900 g
	Ethylene bromide	23 L
	Ethylene chlorohydrin	2 kg
	Ethyl phosphate	2 kg
	Fluoranthene	200 g
	Fluorenone	100 g
	N-Hexylphenylcarbinol	40 g
	o-Idobenzoyl chloride	100 g
	Methyl N-amyl Ketone	7 kg
	Methylethylamine hydrochloride	60 g
	4-Methyl-2-pentanol	3 kg
	Methyl phenylacetate	250 g
	Methyl-iso-thiocyanate	50 g
	4-Methylumbelliferone	25 g
	1,2-Naphthoquinone	25 g
	1-Naphthyl isocyanate	25 g
	Pentaerythritol	500 g
	Phenanthrene	100 g
	m-Phenetidine	100 g
	o-Phenetidine	100 g
	p-Phenetidine	400 g
	Phenyl acetate	300 g
	Phenyl-a-naphthylamine	100 g
	Phthalyl chloride	500 g
	p-Isopropylbenzaldehyde	800 g
	Isopropyl bromide	500 g
	Propylene chloride	750 g
	N-Propyl sulfone	25 g
	p,p-Tetramethyldiaminodiphenylmethane	300 g
	o-Tolidine dihydrochloride	400 g
	1,2,3-Tribromopropane	200 g
	1,1,1-Trichloroethane	23 L
	Xanthidrol	80 g
8/82	1,1,1-Trichloroethane	416 L
	2,2,4-Dihydroxybenzaldehyde	700 g
4/83	Ammonium acetate	16 kg
	Ammonium sulfide	5 L
	Antimony, metal	< 1 kg

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Surplus Chemicals Transferred to Environmental Management for Disposal

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
4/83 cont.	Calcium fluoride	5 kg
	Ferrous sulphamate	19 L
	Lithium sulfate	< 1 kg
	Mercurous nitrate	< 1 kg
	Acetyl p-aminobenzoic acid	400 g
	B-Amino-1-naphthol-3,6-disulfonic acid	250 g
	DL-A-Aminophenylacetic acid	30 g
	4-Amino-m-toluenesulfonic acid	2 kg
	p-Arsanilic acid	200 g
	DL-10-Camphorsulfonic acid	200 g
	Cyanuric acid	300 g
	A,B-Dibromosuccinic acid	75 g
	Diglycolic acid	200 g
	Furoic acid	200 g
	Indole-3-acetic acid	2 g
	Acetyl thiourea	200 g
	B-Diethylaminoethyl alcohol	1 kg
	1-Aminoanthraquinone	100 g
	Benzoylacetone	20 g
	Benzyl thiocyanate	600 g
	Bromohydroquinone	50 g
	N-Butyl sulfone	50 g
	2,4-Dibromophenol	100 g
	Di-isobutylene	4 kg
	Dichloroacetyl chloride	400 g
	1,3-Diphenylguanidine	300 g
	Ethyl,N-Butylmalonate	100 g
	Ethyl isothiocyanate	25 g
	Hexachloroethane	500 g
	Methyl thiocyanate	200 g
	Phenyl isothiocyanate	100 g
	Propylene diamine	1 kg
	Succinimide	300 g
	p,p-Tetramethyldiaminobenzophenone	25 g
	Xanthone	50 g
	Ion Exchange Resin	3 kg
4/84	Molybdic acid	1 kg
	Cesium oxide	5 kg
	Potassium bifluoride	5 kg
	Potassium, metal	< 1 kg
	Potassium periodate	< 1 kg
	Potassium thiocyanate	1 kg
	Titanium oxide	10 kg
	1-Nitroanthraquinone-5-sulfonic acid	5 g
	Trichloroacetic acid	800 g
	Acetamide	1 kg
	p-Aminophenol acetyl	25 g
	B-Dimethylaminoethyl alcohol	1 kg

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Surplus Chemicals Transferred to Environmental Management for Disposal

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
4/84	p-Aminoacetophenone	50 g
cont.	2-Aminoanthraquinone	100 g
	3-Aminoquinoline	50 g
	2-Aminothiazole	1000 g
	Benzenesulfonylamide	100 g
	o-Bromophenetole	125 g
	p-Bromophenetole	100 g
	m-Chlorophenyl isocyanate	100 g
	2,4-Diaminophenol dihydrochloride	500 g
	Dibenzalacetone	25 g
	4,4-Dibromobiphenyl	200 g
	2-Diethylamino-1,4-dimethylbenzene	50 g
	4,4-Dihydroxybenzophenone	50 g
	2,5-Dimethoxyaniline	75 g
	Dimethyldihydroresorcinol	25 g
	Phenyl cellosolve	22 kg
	Ethylene glycol, diacetate	8 kg
	Hydantoin	75 g
	a-Hydrindone	50 g
	p-Hydroxybenzaldehyde	200 g
	g-Hydroxybutronitrile	10 g
	p-Hydroxyphenylglycine	100 g
	o-Methoxybenzaldehyde	300 g
	p-Phenylacetophenone	25 g
	Isopropyl acetate	100 g
	Isopropyl acetate, purified	8 L
	Tetramethylammonium chloride	1000 g
	p-Toluamide	75 g
	1,2,3-Trichloropropane	200 g
	Buffer solution	23 L
	Ion Exchange resin	8 kg

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**OAK RIDGE
NATIONAL
LABORATORY**

MARTIN MARIETTA

HISTORICAL CHEMICAL RELEASE REPORT

FOR

OAK RIDGE NATIONAL LABORATORY

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

ENVIRONMENTAL AND OCCUPATIONAL SAFETY DIVISION

OAK RIDGE NATIONAL LABORATORY

May 1986

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FOR THE UNITED STATES
DEPARTMENT OF ENERGY**

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HISTORICAL CHEMICAL RELEASE REPORT
FOR
OAK RIDGE NATIONAL LABORATORY

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
ENVIRONMENTAL AND OCCUPATIONAL SAFETY DIVISION
OAK RIDGE NATIONAL LABORATORY

May 1986

Historic Chemical Release Report for Oak Ridge National Laboratory

Introduction

This report provides information on the past use and disposition of toxic chemicals at the Oak Ridge National Laboratory (ORNL). As part of this effort, chemicals have been identified which were believed to have the greatest potential for environmental or public health impacts based on their toxicity and/or quantities used. Historically, the research activities at ORNL have utilized numerous chemicals in a wide-range of quantities, i.e., milligram to kilogram, milliliter to liter amounts. Approximately, 2,000 different chemicals were reviewed prior to formulating the final listing of 107 chemicals which are included in this report.

Sources of Information

Several different information sources were considered in the preparation of this report. However, only those sources which were well documented have been utilized. These sources included the following:

- Annual Toxic Chemical Usage by ORNL Department - Report 3063 (1980-1985)
- ORNL Hazardous Materials Usage Reconciliation - Report 7010 (1980-1985)
- Purchase Requisitions with ORNL Account Numbers (1981-1985)
- Hazardous Waste Disposal Records (1982-1985)
- Asbestos Containing Waste Materials Disposal Records
- Waste Management Operating Records for ORNL Waste Treatment Systems
- Plant & Equipment Operating Records for Grounds Maintenance
- PCB Tracking System

Because of the limitation to use only documented records, in most cases, it was not possible to provide a good retrospective database of more than five years.

Historical Chemical Findings

Information for 107 chemicals is provided in the Attachments and Appendices. Attachment I is comprised of the completed Chemical Release Data Forms on each chemical. Attachment II provides available information on the estimated chemical usage for each of the 107 items. Finally, Attachment III provides a summation of ORNL surplus chemicals and other related activities. The Appendices serve to provide some additional information on specific chemical releases of significance.

ATTACHMENT I
Chemical Release Data Forms

CHEMICAL RELEASE DATA FORM

Chemical Name: Acetone

Uses: Solvent, cleaner, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

The above named chemical was identified as a constituent present in spill material that resulted in a fish-kill in White Oak Creek in 1983. See Appendix I for more details.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Acetonitrile

Uses: Solvent, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Acrylamide

Uses: Ion exchange columns, chemical laboratory uses

Solid ☒ Liquid ☐ Gas ☐

Listed as Toxic: Yes ☒ No ☐

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Aluminum nitrate
Uses: Chemical laboratory uses
Solid ☒ Liquid _____ Gas _____
Listed as Toxic: Yes _____ No ☒.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonia, anhydrous

Uses: Refrigerant, chemical reagent, blueprinting

Solid _____ Liquid _____ Gas X.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonium hydroxide

Uses: Cleaners, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonium bifluoride

Uses: Electroplating operations

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts..

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonium nitrate

Uses: Fertilizer

Solid ☒ Liquid ☐ Gas ☐.

Listed as Toxic: Yes ☐ No ☒.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Asbestos - Containing materials

Uses: Insulation

Solid ☒ Liquid ☐ Gas ☐.

Listed as Toxic: Yes ☒ No ☐.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

Asbestos has been used at ORNL and there are various on-going asbestos removal projects. The study conducted (Aug. 13 through Sept. 21, 1984) for Non-radiological Process Wastewater Characterization indicated a minimum of < 0.3 and a maximum of 3.00 (with a mean value of 0.35) Million Fibers per Liter (MFL). The flume location which served as a reference for this study indicated < 0.3 MFL. No environmental impact is presently known or suspected due to asbestos.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Asbestos-containing waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Barium octahydrate
Uses: Chemical laboratory uses
Solid X Liquid _____ Gas _____
Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: N-Methyl carbamate (Baygon)

Uses: Insecticide

Solid X Liquid Gas .

Listed as Toxic: Yes No X .

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Benzene

Uses: Solvent, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

The above named chemical was identified as a constituent present in spill material that resulted in a fish-kill in White Oak Creek in 1983. See Appendix I for more details.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Cadmium nitrate
Uses: Chemical laboratory uses
Solid X Liquid Gas .
Listed as Toxic: Yes X No .

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Calcium hypochlorite
Uses: Bleach, chemical laboratory uses
Solid X Liquid Gas .
Listed as Toxic: Yes X No .

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Carbon monoxide

Uses: Ecological research uses, synthesis

Solid _____ Liquid _____ Gas X

Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Carbon tetrachloride

Uses: Cleaner, solvent, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been one carbon tetrachloride spill 3.78 L (1 gal) in 1984. However, it occurred indoors and there was no evidence of environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Chlordane

Uses: Insecticide

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Chlorine, gas

Uses: Treatment of Sewage Treatment Plant effluent

Solid _____ Liquid _____ Gas X.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

An unknown amount of chlorine and helium were released at Bldg. 4500S on 2/26/85. There were no known environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- ORNL Waste Management operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Chloroform

Uses: Solvent, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Chlorpyrifos (Bolt)

Uses: Insecticide

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Chromic acid

Uses: Cleaner, chemical laboratory uses

Solid _____ Liquid X Gas _____

Listed as Toxic: Yes X No _____

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Coal oil mixture

Uses: R&D work in coal conversion programs

Solid _____ Liquid X Gas _____

Listed as Toxic: Yes _____ No X

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Coal Tar Pitch

Uses: Roofing material, R&D coal conversion programs

Solid ☒ Liquid ☒ Gas ☐.

Listed as Toxic: Yes ☐ No ☒.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing; (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Cyclohexane

Uses: Solvent, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Diazinon

Uses: Insecticide

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: 2,4 - Dichloropenoxy acetic acid (2,4-D)

Uses: Herbicide

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Diethylbenzene

Uses: Solvent, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Diethylenetriamine pentacetic sodium salt

Uses: Chemical synthesis, chemical laboratory uses

Solid ☒ Liquid ☐ Gas ☐

Listed as Toxic: Yes ☐ No ☒

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: 1,4 - Dioxane

Uses: Solvent, liquid scintillation counting, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Disulfoton (Disyston G)

Uses: Insecticide

Solid ☒ Liquid ☐ Gas ☐.

Listed as Toxic: Yes ☒ No ☐.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Dodecane

Uses: Solvent

Solid _____ Liquid X Gas _____

Listed as Toxic: Yes _____ No X

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium salt organo-phosphoric acid, Merceptobenzotriazolo
(Endcor)

Uses: Corrosive inhibitor used in cooling towers

Solid _____ Liquid X Gas _____

Listed as Toxic: Yes _____ No X

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

Results of a toxicity test using cooling tower effluents have indicated detrimental effects on aquatic test organisms. The use of this chemical as a corrosive inhibitor in the cooling towers has been terminated.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Epoxy resins

Uses: Coatings, adhesives, potting of electronic circuits

Solid _____ Liquid X Gas _____
Listed as Toxic: Yes _____ No X

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethyl acetate

Uses: Solvent, paint, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethyl alcohol

Uses: Solvent, cleaner/sterilizer, chemical and biological laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

The above named chemical was identified as a constituent present in spill material that resulted in a fish-kill in White Oak Creek in 1983. See Appendix I for more details.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethyl, alcohol, denatured

Uses: Solvent, cleaner, chemical and biological laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethyl ether

Uses: Solvent, anesthetic, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethylene glycol

Uses: Antifreeze, coolant, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

Four ethylene glycol spills took place due to mechanical failures or operator error on 2/13/80, 10/26/81, 7/2/84, and 10/24/85. These spills ranged in quantities from 7.57 L (2 gal) to 75,700 L (20,000 gal). There was no evidence of environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ethylene oxide

Uses: Sterilant, chemical laboratory uses

Solid _____ Liquid _____ Gas X.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ferric chloride
Uses: Chemical laboratory uses
Solid ☒ Liquid ☐ Gas ☐
Listed as Toxic: Yes ☒ No ☐

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ferric sulfate
Uses: Chemical laboratory uses
Solid X Liquid Gas .
Listed as Toxic: Yes X No .

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Formaldehyde

Uses: Sterilant, tissue fixative, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Formamide

Uses: Chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Hexane

Uses: Solvent, paints, chemical laboratory uses

Solid _____ Liquid X Gas _____

Listed as Toxic: Yes X No _____

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

On 4/17/84, 0.47 L (1 pint) of hexane was spilled at Bldg. 7001. There was no environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Hydrochloric acid
Uses: Cleaner, metal prep., chemical reagent
Solid _____ Liquid X Gas _____
Listed as Toxic: Yes X No _____

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Hydrofluoric acid:
Solid _____ Liquid X Gas _____.
Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Hydrogen peroxide
Uses: Bleach, disinfectant, chemical uses
Solid X Liquid X Gas .
Listed as Toxic: Yes No X .

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Isopentane

Uses: Chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Isopropyl alcohol

Uses: Solvent, paints, disinfectant, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: 4,4' - Dichloro - α - trichloromethyl
benzhydrol (Kelthane)

Uses: Insecticide

Solid ☒ Liquid ☐ Gas ☐

Listed as Toxic: Yes ☒ No ☐

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant and Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Lacquer thinner

Uses: Paints, coatings

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: 2-Chloro-2',6'-diethyl-N(methoxy methyl) acetanilide
(Lasso)

Uses: Herbicide

Solid ☒ Liquid ☐ Gas ☐.

Listed as Toxic: Yes ☐ No ☒.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant and Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Lead sheet

Uses: Soldering, radiation shielding, alloys

Solid ☒ Liquid ☐ Gas ☐

Listed as Toxic: Yes ☒ No ☐

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

During the operation of SWSA 6, mixed wastes containing lead were disposed by land burial. The implication of this information is that portions of SWSA 6 should be classified as RCRA disposal units.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Lindane

Uses: Pesticide

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant and Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Magnesium nitrate

Uses: Chemical laboratory uses

Solid X Liquid Gas .

Listed as Toxic: Yes X No .

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Malathion

Uses: Insecticide

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant and Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Mercury

Uses: Lamps, batteries, gauges, instruments, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There were twelve cases of recorded mercury spills at ORNL ranging from trace amounts to 0.1 kg (0.22 lb) between 1980 and 1985. There were no known environmental impacts from these spills.

There have been occasions at ORNL when pockets of mercury were discovered at pipes or under tiles. These small quantities are attributed to the processes which were undertaken at ORNL to support the Y-12 thermonuclear weapons program. These operations took place in the 1950s and 1960s at Bldgs. 4501, 3503, and 3592. Though there is not an accurate measure of the mercury loss at ORNL, operating personnel have estimated losses of 907 - 1361 kg (2000-3000 lb) due to spills and leakage.

In a recent study, soil samples collected around Bldg. 4501 contained mercury concentrations ranging from 0.05 to 4.4 ppm. However, one sample was as high as 465 ppm. Soil samples near Bldg. 3503 contained mercury concentrations ranging from 0.8 to 25 ppm and near Bldg. 3592 the samples ranged from 4.1 to 320 ppm.

Known or Suspected Environmental Impacts: (cont.)

Though there were individual fish samples with higher concentrations, all average values of mercury concentrations in Clinch River fish were below the Food and Drug Administration action level of 100 ng/g.

Mercury concentrations in water collected at White Oak Dam, White Oak Creek, and Melton Hill Dam were all higher than the Tennessee stream criteria. (Source: Environmental Monitoring Report, ORNL-6209).

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Methyl alcohol

Uses: Solvent, paint, fuel, coolant, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Methyl ethyl ketone

Uses: Solvent, paints, coatings, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts. - -

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: p,p' - Diaminodiphenylmethane

Uses: Plastic coatings

Solid ☒ Liquid ☐ Gas ☐

Listed as Toxic: Yes ☐ No ☒

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Methylene chloride

Uses: Solvent, paints, coatings, degreaser, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

The above named chemical was identified as a constituent present in spill material that resulted in a fish kill in White Oak Creek in 1983. See Appendix I for more details.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Metex Stripper

Uses: Metal cleaning

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Micro-bio-Treat [n-alkyl dimethyl benzylammonium
(Bis (Tri-n-butyltin) oxide)]

Uses: Control algae growth in cooling towers

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

Results of toxicity test using cooling tower effluents have indicated detrimental effects on aquatic test organisms. The use of this chemical for controlling algae growth in cooling towers has been terminated.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant and Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Naptha

Uses: Solvent, paints, coatings, chemical laboratory uses

Solid _____ Liquid X Gas _____

Listed as Toxic: Yes X No _____

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Nickel Chloride

Uses: Metal plating, chemical laboratory uses

Solid X Liquid Gas .

Listed as Toxic: Yes X No .

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Nickel sulfate
Uses: Metal plating, chemical laboratory uses
Solid ☒ Liquid ☐ Gas ☐
Listed as Toxic: Yes ☒ No ☐

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Nitric acid

Uses: Cleaning, metal prep., chemical reagent

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

Five different nitric acid spills, ranging from trace amounts to 3.79 L (1 gal), took place indoors. There was no environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Nitric oxide

Uses: Chemical laboratory uses

Solid _____ Liquid _____ Gas X.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs and trichlorethylene and these are monitoring only requirements. The primary reason for this is that existing data do not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Acetylphosphoramidothioic acid, 0,5-dimethyl ester (Orthene)

Uses: Insecticide

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Pararosaniline

Uses: Dyes, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No X .

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Pentane

Uses: Solvent, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Perchloric acid

Uses: Chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Petroleum ether
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid X Gas _____.
Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Phenol

Uses: Disinfectant, chemical laboratory uses

Solid ☒ Liquid ☐ Gas ☐.

Listed as Toxic: Yes ☒ No ☐.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Phenolic resin

Uses: Parts fabrication, potting for electronic circuits

Solid ☒ Liquid ☐ Gas ☐.

Listed as Toxic: Yes ☐ No ☒.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Phosphoric acid

Uses: Metal prep., cleaning, chemical reagent

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Polychlorinated biphenyls (PCBs)

Uses: Dielectric in electric equipment

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

On May 6, 1981, and April 4, 1984, rupturing transformer incidents took place. In each case, oil from transformers were sprayed on desk tops, floors, and nearby personnel. Incidents occurred inside the buildings. Samples were taken and areas were decontaminated. In addition to these, two PCB oil spills and three light ballast leakages containing PCBs have occurred. There have been no known environmental consequences from these incidents. Further information on PCB related incidents is included in Appendix II.

According to the Environmental Monitoring Report, ORNL-6209 for 1984, PCB concentration in Clinch River fish at CRM 20.8 on the average were very close to background level and were below the 2 $\mu\text{g/g}$ wet weight tolerance level designated by the Food and Drug Administration. The total PCB concentration in water collected about Melton Hill Dam was 0.00014 ppm.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- PCB Tracking System.

CHEMICAL RELEASE DATA FORM

Chemical Name: Potassium cyanide

Uses: Metal plating, chemical laboratory uses

Solid ☒ Liquid ☐ Gas ☐.

Listed as Toxic: Yes ☒ No ☐.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Potassium hydroxide
Uses: Plating, cleaning, chemical reagent
Solid X Liquid _____ Gas _____
Listed as Toxic: Yes X No _____

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

On May 25, 1984, and April 9, 1986, 37.85 L (10 gal) and 1.9 L (0.5 gal) of potassium hydroxide were spilled within buildings 7000 and 7920. There were no environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- ORNL Waste Management operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Pramitol

Uses: Herbicide

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant and Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Pyridine

Uses: Solvent, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ronstar

Uses: Herbicide

Solid ☒ Liquid ☐ Gas ☐.

Listed as Toxic: Yes ☐ No ☒.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: N-Phosphonomethyl glycine isopropylamine salt (Round-up)

Uses: Herbicide

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes _____ No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Silicon tetrafluoride

Uses: Chemical laboratory uses

Solid _____ Liquid _____ Gas X.

Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Silvex

Uses: Herbicide

Solid ☒ Liquid ☐ Gas ☐

Listed as Toxic: Yes ☒ No ☐

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium bifluoride

Uses: Chemical laboratory uses

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium cyanide

Uses: Metal plating, chemical laboratory uses

Solid ☒ Liquid ☐ Gas ☐

Listed as Toxic: Yes ☒ No ☐

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium dithionite
Uses: Silver recovery, chemical laboratory uses
Solid ☒ Liquid ☐ Gas ☐
Listed as Toxic: Yes ☒ No ☐

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

On 7/24/86 a sodium dithionite related spontaneous chemical reaction occurred at Bldg. 4500S. The vessel containing the reaction was removed from the building to an environmentally safe location and the incident resolved. No environmental impact is known from this accident.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Silver Recovery processing records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium hexametaphosphate
Uses: Cleaning, chemical laboratory uses
Solid ☒ Liquid ☐ Gas ☐
Listed as Toxic: Yes ☐ No ☒.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium Hydroxide

Uses: Cleaning, plating, chemical reagent

Solid ☒ Liquid ☐ Gas ☐.

Listed as Toxic: Yes ☒ No ☐.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

Sodium hydroxide spilled during the filling of a tank inside Bldg. 3004 via a line from a tanker outside. Even though the tank was diked, 3.78 L (1 gal) of material was spilled outside the containment dike. Spill and washings caused NPDES noncompliance; however, it was only a temporary environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal operations.
- Waste Management operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium nitrate .
Uses: Chemical laboratory uses
Solid X Liquid Gas .
Listed as Toxic: Yes X No .

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium sulfide
Uses: Chemical laboratory uses
Solid X Liquid Gas
Listed as Toxic: Yes X No

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Subdue E2

Uses: Fungicide

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sulfur hexafluoride

Uses: dielectric, tracer gas

Solid _____ Liquid _____ Gas X.

Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Sulfuric acid

Uses: Cleaning, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

On March 24, 1980, a 60.56 L (16 gal) spill of sulfuric acid was traced to Bldg. 3544. This spill caused an NPDES permit violation for pH. However, this was a temporary environmental impact.

Indoor spills on March 19, 1981, March 30, 1980, and April 11, 1986, of 22.71 L (6 gal); 3.79 L (1 gal); and 37.85 L (5-10 gal), respectively, of sulfuric acid were reported; however, there was no cause to believe they created an environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Waste Management operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: 4'-Bromo (1,1'-biphenyl)-4-yl (Talon)

Uses: Rodenticide

Solid ☒ Liquid ☐ Gas ☐

Listed as Toxic: Yes ☐ No ☒

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Tetrachloroethylene

Uses: Cleaner, degreaser, chemical laboratory uses

Solid _____ Liquid X Gas _____

Listed as Toxic: Yes X No _____

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Tetrahydrofuran

Uses: Solvent, chemical laboratory uses

Solid _____ Liquid X Gas _____

Listed as Toxic: Yes X No _____

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Toluene

Uses: Solvent, paints, coatings, chemical laboratory uses, liquid,
scintillation counting

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

During the operation of SWSA 6, mixed wastes containing toluene were disposed by land burial. The implication of this information is that portions of SWSA 6 should be classified as RCRA disposal units.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

The above named chemical was identified as a constituent present in spill material that resulted in a fish-kill in White Oak Creek in 1983. See Appendix I for more details. On May 11, 1983, 5.68 L (1.5 gal) of toluene was spilled at Bldg. 4500N. No environmental impact resulted.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage by ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Tributyl phosphate
Uses: Solvent, chemical laboratory uses
Solid _____ Liquid _____ Gas _____
Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

A trace amount of this chemical was spilled at Bldg. 7001 on 11/28/84. There was no environmental impact.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Trichloroethylene

Uses: Solvent, paints, coatings, chemical laboratory uses, liquid
scintillation counting

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

- No known or suspected environmental impacts.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Trichloromethylsilane

Uses: Solvent, chemical laboratory uses

Solid _____ Liquid X Gas _____

Listed as Toxic: Yes _____ No X

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection..

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Triethanolamine

Uses: Cleaner, degreaser, chemical laboratory uses

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Urethane

Uses: Solvent, chemical laboratory uses

Solid X Liquid _____ Gas _____.

Listed as Toxic: Yes _____ No X.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Varso1

Uses: Solvent, cleaning

Solid _____ Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Vydate

Uses: Insecticide

Solid ☒ Liquid ☐ Gas ☐.

Listed as Toxic: Yes ☐ No ☒.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

There has been no known or suspected environmental impact due to the historic releases of this chemical.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include one or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.
- Plant & Equipment operating records.

CHEMICAL RELEASE DATA FORM

Chemical Name: Xylene

Uses: Cleaner, degreaser, chemical laboratory uses

Solid X Liquid X Gas _____.

Listed as Toxic: Yes X No _____.

Status of Environmental Compliance (Past and Present):

At present, all discharges conform to existing ORNL permit conditions. The ORNL NPDES permit (1975-1980) did not contain discharge limitations for any of the listed chemicals. The present NPDES permit (1986-1990) lists only chloroform, PCBs, and trichloroethylene and these are monitoring only requirements. The primary reason for this is that existing data does not indicate that the chemicals are being released via surface water discharges. If after the mandatory year's monitoring, certain of these appear in sufficient quantity then limitations may be imposed. The organic compounds, benzene, chloroform, methylene chloride, tetrachloroethylene, and trichloroethylene appear with limits for the Nonradiological Wastewater Treatment Plant (X12), but this facility is not scheduled to be completed until 1990 and thus the limitations are not effective until that time.

Known or Suspected Public Health Impacts:

- No known or suspected public health impacts.

Known or Suspected Environmental Impacts:

The above named chemical was identified as a constituent present in spill materials that resulted in a fish-kill in White Oak Creek in 1983. See Appendix I for more details.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include on or more of the following: (1) adequate ventilation, (2) protective clothing, (3) chemical goggles, (4) face shield, and (5) proper respiratory protection.

Source of Chemical Usage Information:

Information taken from the Annual Toxic Chemical Usage By ORNL Department - Report 3063, ORNL Hazardous Materials Usage Reconciliation - Report 7010, and purchase requisitions with ORNL account numbers for 1980-1985.

Source of Chemical Distribution Information/Accuracy:

- Hazardous waste disposal records.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Estimated Distribution in %							
			Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Tetrachloro-ethylene	1985	256,918								Records do not exist for the other categories
	1984	354,208								
	1983	384,049								
	1982	441,278								
	1981	347,872								
	1980	362,997								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
Tetrahydro- furan	1985	185										
	1984	216							15 L			
	1983	216							8 L			
	1982	428										
	1981	450										
	1980	515										
												Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial	Other	Unknown
Toluene	1985	761							223 L		Records do not exist for the other categories
	1984	1,014							33 L		
	1983	1,347							81 L		
	1982	1,359									
	1981	2,142									
	1980	2,657									

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product					On-site			Off-site		Unknown
			Airborne Release	Liquid Effluent	Storage	Burial	Other	Burial	Other	Burial	Other	Other	
Tributyl phosphate	1985												Records do not exist for the other categories
	1984	2,455											
	1983	2,530											
	1982	950											

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
Trichloro-ethylene	1985	4,315							14 L			Records do not exist for the other categories
	1984	4,315							998 L			
	1983	2,309							26 L			
	1982	5,636										
	1981	17,547										
	1980	15,026										

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

Estimated Distribution in %

Records do
not exist for
the other
categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
Triethano-amine	1985											
	1984											
	1982	91										
	1981	1										
									< 1 kg 4 kg			Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Estimated Distribution in %						
			Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Urethane	1983	946						1 kg	Records do not exist for the other categories
	1981	38							

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Varsol	1985	24,129						208 L		Records do not exist for the other categories
	1984	22,718						624 L		
	1983	25,617						1,052 L		
	1982	29,474								
	1981	38,686								
	1980	40,594								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Vydate	1982	19							Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Xylene	1985	356 L						12 L		Records do not exist for the other categories
		6 kg								
	1984	148 L						17 L		
		4 kg								
	1983	284 L								
		10 kg								
	1982	201 L								
		8 kg								
	1981	310 L								
		11 kg								
	1980	394 L								
		15 kg								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ATTACHMENT III

ORNL Surplus Chemical Sales and Transfers

ORNL Waste Oil Sold for Recycle

<u>Date</u>	<u>Quantity (liters)</u>	<u>Off-site Buyer</u>
FY 1980	37,850	Petroleum Recycling Corp.
FY 1981	39,364	Alpha Recovery Systems, Inc.
FY 1982	25,738	Petroleum Recycling Corp.
FY 1983	8,176	Universal Oil & Supply Co.
FY 1984	71,468	Alpha Recovery Systems, Inc.
FY 1985	7,949	Universal Oil & Supply Inc.
	18,168	Alpha Recovery Systems, Inc.
Total	208,713	

All wastes oils are analyzed for PCBs, organics, and radioactivity prior to being placed in the Waste Oil Storage Tank.

Waste Acceptance Criteria:

PCB	<2 ppm
Organics	<50 ppm
Gross beta	1.1×10^{-2} Bq/mL
Gross gamma	1.1×10^{-2} Bq/mL
^3H	1.1×10^3 Bq/mL
^{14}C	3×10^2 Bq/mL

Surplus Chemicals Transferred to Other Government Agencies

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>	<u>Receiving Agency</u>
6/79	Iodic acid	1 kg	Department of General Services
	Nickelous sulfate	4 kg	
	Potassium chromate	9 kg	
	Potassium permanganate	23 kg	
	Hardening resin	57 g	
	Argon	6 L	
6/80	1-Amino-8-naphthol-4-sulfonic acid	1000 g	Comparative Animal Research Laboratory
	Benzoic anhydride acid	100 g	
	1-Naphthylamine-4-sulfonic acid	25 g	
	1-Naphthylamine-8-sulfonic acid	1 kg	
	Benzyl acetate	2 kg	
	2,4-Dichloro-1-Naphthol	100 g	
	2,3-Dichloronaphthoquinone	25 g	
	2,7-Dihydroxynaphthalene	50 g	
	A-Fluoronaphthalene	50 g	
	A-Naphthonitrile	10 g	
	B-Naphthylamine hydrochloride	50 g	
	A-Naphthylhydrazine hydrochloride	75 g	
	6-Nitroquinoline	40 g	
	o-Cresotinic acid	100 g	
	2,4-Dinitro-1-naphthol-7-sulfonic acid	25 g	
	P-Fluorobenzoic acid	5 g	
7/80	8-Hydroxy-5-quinoline sulfonic acid	100 g	Comparative Animal Research Laboratory
	7-Iodo-8-hydroxyquinoline-5-sulfonic acid	100 g	
	A-Naphthaleneacetic acid	100 g	
	B-Naphthoxyacetic acid	25 g	
	S-Nitrobarbituric acid	25 g	
	B-Oxynaphtholic acid	50 g	
	Quinaldinic acid	25 g	
	Violuric acid	25 g	
	1-Amino-2-naphthol hydrochloride	25 g	
	2-Aminonaphthoquinone	5 g	
	2-Chloroquinoline	25 g	
	6-Chloroquinoline	25 g	
	Decahydroquinoline	25 g	
	5,7-Dibromo-8-hydroxyquinoline	35 g	

Surplus Chemicals Transferred to Other Government Agencies

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>	<u>Receiving Agency</u>
7/80	2,4-Dibromo-1-naphthol	25 g	
cont.	9,10-Dichloroanthracene	25 g	
	3,5-Dimethylpyrozole	25 g	
	2,7-Dinitrophenanthra-quinone	1 g	
	2,4-Dioxothiazolidine	25 g	
	N-Methyl-2-quinoline	25 g	
	5-Nitro-1-naphthylamine	5 g	
	2-Nitrophenanthraquinone	5 g	
	8-Nitroquinoline	10 g	
8/80	1 lot (507 items) of miscellaneous chemicals classified as DOT Flammable liquid, n.o.s. and poisonous solid, n.o.s.		University of Tennessee, Knoxville via the Department of General Services
7/83	Potassium nitrite	16 kg	Georgia Coastal Plain Experimental Station, Tifton, GA
12/85	Ethyl Alcohol	11 drums	University of Tennessee, Knoxville via the Department of General Services
3/86	Hydraulic fluid, non-petroleum base	2 drums	Roane State Community College via the Department of General Services
	Hydraulic fluid	371 L	
	Gulf, oil	98 containers	
	Marcol, oil	2 drums	
	Shell Hydraulic oil	2 drums	
	Isopropanol	2 drums	

Surplus Chemicals Transferred to ORGDP Property Sales

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
2/84	Sulfuric acid	16 kg
11/84	o-Aminophenol-p-sulfonic acid	5 kg
	Thioglycolic acid	200 g
	p-Anisidine acetyl	400 g
	o-Toluidine acetyl	2 kg
	Dibromopropyl alcohol	1 kg
	Cyanoacetanilide	100 g
	Resorcinol monomethyl ether	75 g
	Furil dioxime	20 g
	Heptoyl chloride	300 g
	2-Hydroxy-1,4-Dimethyl benzene	250 g
	Methyl bromobenzoate	525 g
	Methyl-p-aminophenol sulfate	200 g
	Myristoyl chloride	100 g
	P-Naphthol benzine	25 g
	o-Nitrophenetole	100 g
	P-Nitrophenetole	100 g
	P-Nitrophenylhydrazine	75 g
	P-Nitrophenylhydrazine hydrochloride	100 g
	P-Nitrosophenol sodium salt	125 g
	Palmitoyl chloride	25 g
	G-Phenylpropyl bromide	100 g
	Phloroglucinol	150 g
	Propionamide	200 g
	Tetra-N-Butylammonium iodide	400 g
	Thio-B-Naphthol	50 g
	Toluhydroquinone	250 g
	P-Tolyl isocyanate	25 g
	Trimethylamine	250 g
	Trimethylene bromide	200 g
	Trimethylene chlorohydrin	25 g
	Xanthidrol	20 g
	o-xylose	275 g
5/85	Lead carbonate	10 kg
	Potassium bromide	25 g
	Sodium acetate	30 kg
	Sodium peroxide	5 kg
	Tantalum pentoxide	1 kg
	Adipic acid	1 kg
	o-Aminobenzenesulfonic acid	125 g
	D-10-Camphorsulfonic acid	100 g
	Chloroacetic acid	2 kg
	3,5-Dinitrobenzoic acid	100 g
	Iodoacetic acid	25 g
	B-Iodopropionic acid	25 g

Surplus Chemicals Transferred to ORGDP Property Sales

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
5/85	Naththalene-B-sulfonic acid	200 g
cont.	A-Naphthoic acid	25 g
	o-Toluic acid	800 g
	p-Toluic acid	3 kg
	Undecylenic acid	500 g
	Acenaphthene	200 g
	Allyl formate	100 g
	m-Aminophenol	200 g
	o-Aminophenol	100 g
	p-Aminophenol	500 g
	p-Aminophenol hydrochloride	200 g
	Tert-Amylbenzene	50 g
	n-Amyl bromide	400 g
	o-Anisidine	100 g
	p-Anisidine	100 g
	Anthraquinone	250 g
	Azoxybenzene	100 g
	Benzil	200 g
	Benzyl chloride	2 kg
	A-Bromo-acetophenone	200 g
	Bromobenzene	10 g
	Bromomesitylene	200 g
	o-Bromophenol	50 g
	2-Bromopyridine	100 g
	o-Bromotoluene	50 mL
	Tert-butylbenzene	25 g
	N-Butyl bromide	250 g
	Isobutyl chloride	200 g
	Isocaproyl chloride	50 g
	Cetyl bromide	200 g
	Cetyl iodide	100 g
	o-Chloroaniline	500 g
	p-Chloroaniline	100 g
	A-Chloromethylnaphthalene	500 g
	Crotonaldehyde	500 g
	Cyanoacetamide	200 g
	1,2,5,6-Dibenzanthracene	1 g
	9,10-Dibromoanthracene	50 g
	N-Dibutylamine	5 kg
	Di-n-butyl Ketone	25 g
	Dicyandiamide	1 kg
	Diethyl Ketone	3 kg
	Dimethylbenzylamine	200 g
	AS-Diphenylhydrazine hydrochloride	25 g
	Di-p-tolyl Ketone	25 g
	Petroleum ether	8 L
	Ethyl anisate	100 g
	Ethyl anthranilate	100 g
	Ethyl B-Bromopropionate	100 g

Surplus Chemicals Transferred to ORGDP Property Sales

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
5/85	Ethylene chlorobromide	500 g
cont.	Ethylene chloride	8 kg
	Ethyl fumarate	1 kg
	Ethyl maleate	2 kg
	Ethyl orthoformate	250 g
	Lauryl bromide	700 g
	Methyl anthranilate	3 kg
	Methyl bromoacetate	400 g
	Methyl N-butylcarbinol	25 g
	Methyl N-butyrate	200 g
	o-Methylhydroxylamine hydrochloride	100 g
	Methyl malonate	500 g
	Methyl B-naphthyl Ketone	200 g
	Myristyl bromide	600 g
	m-Nitroaniline	100 g
	o-Nitroaniline	200 g
	4-Nitro-1,2-Diaminobenzene	100 g
	p-Nitrofluorobenzene	25 g
	Nitron	100 g
	1-Nitroso-2-naphthol	100 g
	o-Nitrotoluene	3 kg
	p-Nitrotoluene	250 g
	Phenanthraquinone	25 g
	Phenetole	500 g
	Phenylbenzylcarbinol	25 g
	m-Phenylenediamine	250 g
	DL-A-Phenylethylamine	100 g
	DL-Phenylmethylcarbinol	5 kg
	Picoline	500 g
	Propiophenone	1000 g
	Iso-propylamine	8 kg
	Iso-propyl iodide	100 g
	Quinone	2 kg
	Trans-Stilbene	300 g
	Strychnine sulfate	200 g
	Succinonitrile	200 g
	Sucrose	150 g
	m-Tolunitrile	25 g
	o-Tolunitrile	25 g
	p-Tolunitrile	100 g
	N-Valeronitrile	100 g
	Bromocresol green	5 L
	Buffer solution	64 L

Surplus Chemicals Transferred to Environmental Management for Disposal

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
6/80	4-Iodo-n-xylene	250 g
8/81	Silicic acid	2 kg
	Sulfuric acid	3 kg
	Ammonium thiocyanate	3 kg
	Calcium chloride	25 kg
	Sodium methylate	2 kg
	Yttrium, metal	30 g
	2-Amino-5-chlorobenzoic acid	25 g
	1-Amino-2-naphthol-4-sulfonic acid	75 g
	o-Aminophenol-p-sulfonic acid	4 kg
	B-Bromopropionic acid	25 g
	m-Chlorobenzoic acid	75 g
	Chlorosulfonic acid	2 kg
	3-Hydroxy-2-naphthoic acid	25 g
	l-Malic acid	450 g
	DL-Mandelic acid	1 kg
	Methoxyacetic acid	100 g
	o-Methoxybenzoic acid	100 g
	3-Nitrosalicylic acid	125 g
	5-Nitrosalicylic acid	10 g
	A-Oxynaphthoic acid	40 g
	Salicylacetic acid	100 g
	Salicylic acid	2 kg
	Trimethylacetic acid	200 g
	Acetamide	1 kg
	Allylthiourea	100 g
	N-Amyl chloride	100 g
	Tert-Amyl chloride	600 g
	Benzyl bromide	200 g
	Benzyl chloride	250 g
	o-Bromotoluene	1 kg
	sec-Butyl bromide	100 g
	N-Butyl-p-toluenesulfonate	125 g
	Chloroacetdiethylamide	25 g
	Chloroacetonitrile	200 g
	Chloroacetyl chloride	100 g
	A-Chloronaphthalene	3 kg
	2-Chloropyridine	100 g
	Cinchonine, alkaloid	50 g
	o-Cresyl-p-toluenesulfonate	200 g
	Dicyclohexylamine	1 kg
	Ethyl bromo-n-butyrate	150 g
	Ethyl bromo-n-caproate	75 g
	Ethyl chloroacetate	250 g
	Ethyl naphthylamine	100 g
	m-Fluorochlorobenzene	25 g
	m-Fluorotoluene	25 g
	o-Fluorotoluene	100 g

Surplus Chemicals Transferred to Environmental Management for Disposal

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
8/81	2-Iodo-1,3-dimethylbenzene	10 g
cont	Methyl adipate	100 g
	Methyl bromopropionate	300 g
	Methyl orthoacetate	600 g
	6-Methylquinoline	25 g
	8-Methylquinoline	50 g
	Methyl toluate	< 1 kg
	Naphthyl acetate	100 g
	p-Nitroacetanilide	75 g
	A-Nitronaphthalene	400 g
	m-Nitrophenol	25 g
	Phenylethyl bromide	300 g
	Phenylhydrazine	500 g
	DL-Phenylmethylcarbinol	9 kg
	Phenyl-p-tolyl ketone	300 g
	Pinacol	500 g
	Propiophenone	3 kg
	N-propyl carbonate	100 g
	Propylene glycol	8 L
	Thionaphthol	225 g
	Ethyl bromopropionate	100 g
	Glycine anhydride	75 g
7/82	Hydrofluosilicic acid	3 kg
	Cadmium metal	113 g
	Calcium chloride	11 kg
	Lead sulfate	1 kg
	Magnesium sulfate	16 kg
	Potassium thiocyanate	3 kg
	A-Bromo-n-valeric acid	50 g
	o-Chlorobenzoic acid	100 g
	Trans-Cinnamic acid	300 g
	2,4-Dinitrobenzene sulfonic acid	10 g
	Mucic acid	< 1 kg
	Naphthalic anhydride acid	100 g
	m-Toluic acid.	2 kg
	Trichloroacetic acid	5 kg
	Diacetone alcohol	250 g
	Myristyl alcohol	50 g
	Phenylethyl alcohol	1 kg
	Phenylpropyl alcohol	100 g
	2-Aminopyrimidine	300 g
	Iso-amyl bromide	100 g
	N-Amyl iodide	300 g
	Benzalacetone	300 g
	Benzidine dihydrochloride	28 g
	Bromoacetyl bromide	300 g
	Bromocyclohexane	200 g
	N-Butyl bromide	15 kg

Surplus Chemicals Transferred to Environmental Management for Disposal

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
7/82 cont.	N-Butyl sebacate	500 g
	Cellulose acetate	1 kg
	Cellulose triacetate	500 g
	m-Chlorophenol	25 g
	o-Chlorophenol	1 kg
	Di-n-butylaniline	300 g
	p-Diethylaminobenzaldehyde	25 g
	Diethyl-A-naphthylamine	25 g
	Ethylamine hydrochloride	200 g
	Ethyl bromoacetate	900 g
	Ethylene bromide	23 L
	Ethylene chlorohydrin	2 kg
	Ethyl phosphate	2 kg
	Fluoranthene	200 g
	Fluorenone	100 g
	N-Hexylphenylcarbinol	40 g
	o-Idobenzoyl chloride	100 g
	Methyl N-amyl Ketone	7 kg
	Methylethylamine hydrochloride	60 g
	4-Methyl-2-pentanol	3 kg
	Methyl phenylacetate	250 g
	Methyl-iso-thiocyanate	50 g
	4-Methylumbelliferone	25 g
	1,2-Naphthoquinone	25 g
	1-Naphthyl isocyanate	25 g
	Pentaerythritol	500 g
	Phenanthrene	100 g
	m-Phenetidine	100 g
	o-Phenetidine	100 g
	p-Phenetidine	400 g
	Phenyl acetate	300 g
	Phenyl-a-naphthylamine	100 g
	Phthalyl chloride	500 g
	p-Isopropylbenzaldehyde	800 g
	Isopropyl bromide	500 g
	Propylene chloride	750 g
	N-Propyl sulfone	25 g
	p,p-Tetramethyldiaminodiphenylmethane	300 g
	o-Tolidine dihydrochloride	400 g
	1,2,3-Tribromopropane	200 g
	1,1,1-Trichloroethane	23 L
	Xanthydrol	80 g
8/82	1,1,1-Trichloroethane	416 L
	2,2,4-Dihydroxybenzaldehyde	700 g
4/83	Ammonium acetate	16 kg
	Ammonium sulfide	5 L
	Antimony, metal	< 1 kg

Surplus Chemicals Transferred to Environmental Management for Disposal

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
4/83 cont.	Calcium fluoride	5 kg
	Ferrous sulphamate	19 L
	Lithium sulfate	< 1 kg
	Mercurous nitrate	< 1 kg
	Acetyl p-aminobenzoic acid	400 g
	B-Amino-1-naphthol-3,6-disulfonic acid	250 g
	DL-A-Aminophenylacetic acid	30 g
	4-Amino-m-toluenesulfonic acid	2 kg
	p-Arsanilic acid	200 g
	DL-10-Camphorsulfonic acid	200 g
	Cyanuric acid	300 g
	A,B-Dibromosuccinic acid	75 g
	Diglycolic acid	200 g
	Furoic acid	200 g
	Indole-3-acetic acid	2 g
	Acetyl thiourea	200 g
	B-Diethylaminoethyl alcohol	1 kg
	1-Aminoanthraquinone	100 g
	Benzoylacetone	20 g
	Benzyl thiocyanate	600 g
	Bromohydroquinone	50 g
	N-Butyl sulfone	50 g
	2,4-Dibromophenol	100 g
	Di-isobutylene	4 kg
	Dichloroacetyl chloride	400 g
	1,3-Diphenylguanidine	300 g
	Ethyl,N-Butylmalonate	100 g
	Ethyl isothiocyanate	25 g
	Hexachloroethane	500 g
	Methyl thiocyanate	200 g
	Phenyl isothiocyanate	100 g
	Propylene diamine	1 kg
	Succinimide	300 g
	p,p-Tetramethyldiaminobenzophenone	25 g
	Xanthone	50 g
	Ion Exchange Resin	3 kg
4/84	Molybdic acid	1 kg
	Cesium oxide	5 kg
	Potassium bifluoride	5 kg
	Potassium, metal	< 1 kg
	Potassium periodate	< 1 kg
	Potassium thiocyanate	1 kg
	Titanium oxide	10 kg
	1-Nitroanthraquinone-5-sulfonic acid	5 g
	Trichloroacetic acid	800 g
	Acetamide	1 kg
	p-Aminophenol acetyl	25 g
	B-Dimethylaminoethyl alcohol	1 kg

Surplus Chemicals Transferred to Environmental Management for Disposal

<u>Date</u>	<u>Chemical</u>	<u>Quantity</u>
4/84	p-Aminoacetophenone	50 g
cont.	2-Aminoanthraquinone	100 g
	3-Aminoquinoline	50 g
	2-Aminothiazole	1000 g
	Benzenesulfonylamide	100 g
	o-Bromophenetole	125 g
	p-Bromophenetole	100 g
	m-Chlorophenyl isocyanate	100 g
	2,4-Diaminophenol dihydrochloride	500 g
	Dibenzalacetone	25 g
	4,4-Dibromobiphenyl	200 g
	2-Diethylamino-1,4-dimethylbenzene	50 g
	4,4-Dihydroxybenzophenone	50 g
	2,5-Dimethoxyaniline	75 g
	Dimethyldihydroresorcinol	25 g
	Phenyl cellosolve	22 kg
	Ethylene glycol, diacetate	8 kg
	Hydantoin	75 g
	a-Hydrindone	50 g
	p-Hydroxybenzaldehyde	200 g
	g-Hydroxybutronitrile	10 g
	p-Hydroxyphenylglycine	100 g
	o-Methoxybenzaldehyde	300 g
	p-Phenylacetophenone	25 g
	Isopropyl acetate	100 g
	Isopropyl acetate, purified	8 L
	Tetramethylammonium chloride	1000 g
	p-Toluamide	75 g
	1,2,3-Trichloropropane	200 g
	Buffer solution	23 L
	Ion Exchange resin	8 kg

APPENDIX I

On August 6, 1983, an unknown quantity of organic mixtures and pesticides spilled into White Oak Creek resulting in a fish-kill. Approximately 7,570 L of material (mostly water) was removed from the creek and shipped to an off-site facility for disposal. The chemical analyses of this material is shown below.

ANALYSES RESULTS OF WHITE OAK CREEK FISH KILL INCIDENT

<u>Name of Chemical</u>	<u>Concentration</u>
Aldrin	Trace (low ppb)
Heptachlor	Trace (low ppb)
Acetaldehyde	1 ppm
Freon 113	1 ppm .
Xylene	< 0.5 ppm
Toluene	< 0.5 ppm
Freon 11	< 0.5 ppm
Benzene	< 0.5 ppm .
Ethyl alcohol	< 0.5 ppm
Methylene chloride	< 0.5 ppm
Acetone	< 0.5 ppm
Butyl cellusolve	< 0.5 ppm
Dimethyl benzene	< 015 ppm

APPENDIX II

History of PCB-Related Incidents/Spills at ORNL

<u>Date</u>	<u>Location</u>	<u>Material</u>	<u>Amount</u>
May 6, 1981	3026	PCB Oil (Transformer) < 5 ppm	small amount
July 27, 1981	3012	PCB Oil	378.5 L (100 gal)
August 3, 1981	6000	PCB Oil	3.78 L (1 gal)
August 12, 1983	4500S, R-211	PCB Oil (light ballast) 480,000 ppm	0.01 L (0.003 gal)
April 4, 1984	3026-D	PCB Oil (Transformer) 500 ppm	0.47 L (1 pint)
April 16, 1986	4500S, D-61	PCB Oil (light ballast) 854 ppm	0.01 L (0.003 gal)
September 24, 1985	4500S, G-260	PCB Oil (light ballast) 930,000 ppm	0.01 L (0.003 gal)

ATTACHMENT II

Estimated Chemical Usage

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Acetone	1985	10,447						35 L		Records do not exist for the other categories
	1984	12,858						61 L		
	1983	13,278						36 L		
	1982	15,473								
	1980	16,858								

**"Off-site burial" does not necessarily imply that the wastes were managed by land based disposal. Treatment methods (incineration) has been utilized in some cases. This point is applicable throughout this report.

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Acetonitrile	1985	25,204						12 L		Records do not exist for the other categories
	1984	31,162						24 L		
	1983	26,930						13 L		
	1982	18,501								
	1981	14,020								
	1980	19,777								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Acrylamide	1985	2						.5 kg		Records do not exist for the other categories
	1984	5						3 kg		
	1983	4						9 kg		
	1982	1,368								
	1981	10								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Aluminum nitrate	1985					2, 479 L		324 kg		Records do not exist for the other categories
	1984	3,818				Presently in storage		117 kg		
	1983	3,636						6 kg		

Estimated Distribution in %

Records do
exist for
the other
categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ammonium bifluoride	1985	15						6 kg		Records do not exist for the other categories
	1984	69						< 1 kg		
	1983	70						< 1 kg		
	1982	198								
	1981	305								
	1980	657								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ammonium hydroxide	1985	1,135						28 kg		Records do not exist for the other categories
	1984	1,524						277 kg		
	1983	2,053						309 kg		
	1982	1,666								
	1981	1,540								
	1980	2,549								

Estimated Distribution in %

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Asbestos-Containing Materials										
- Felt Roofing	1985	972m ²				1985	241 m ²	On-site burial		
	1984	640m ²					1,426 m	On-site burial		
	1983	126m ²				1984	28 m ²	On-site burial		
	1982	1,655m ²					2,982 m	On-site burial		
	1981	2,173m ²				1983	274 m ²	On-site burial		
	1980	3,060m ²					1,954 m	On-site burial		
- Sheet Roofing	1985	1,795m ²								
	1984	1,541m ²								
	1983	1,463m ²								
	1982	702m ²								
	1981	488m ²								
	1980	410m ²								
- Tape	1984	56 rolls								
	1983	48 rolls								
	1982	15 rolls								
	1981	38 rolls								
	1980	89 rolls								

*There are unknown quantities of asbestos-containing insulation throughout ORNL. A major effort has been made during the last 3-4 years to identify these areas, remove the asbestos-containing insulation, dispose of properly, and replace with nonasbestos insulation.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Asbestos-Containing Materials (cont.)										
- Insulated Wire	1985	53m								
	1984	295m								
	1983	189m								
	1982	165m								
	1981	456m								
	1980	491m								
- Gaskets	1985	3,193 ea								
	1984	3,669 ea								
	1983	3,396 ea								
	1982	2,408 ea								
	1981	2,337 ea								
	1980	2,450 ea								
- Packing	1985	264m ² 166 kg								
	1984	270m ² 220 kg								
	1983	319m ² 94 kg								
	1982	319m ² 94 kg								
	1981	384m ² 155 kg								
	1980	318m ² 155 kg								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Barium octahydrate	1981	1,918								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site		Off-site		Other	Unknown
							Burial	Burial	Burial	Burial		
Baygon (N-Methyl carbamate)	1984	15										Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
Benzene	1985	238							37 L			Records do not exist for the other categories
	1984	110							43 L			
	1983	246							38 L			
	1982	530										
	1981	708										
	1980	757										

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

Estimated Distribution in %

Records do not exist for the other categories

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Calcium hypochlorite	1985	1,216						8 kg		Records do not exist for the other categories
	1984	936						5 kg		
	1983	952								
	1982	1,095								
	1981	1,772								
	1980	1,325								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Carbon monoxide	1985	13								
	1984	27								
	1983	54								
	1982	59								
	1981	63								
	1980	50								

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage		On-site Burial		Off-site Burial		Other	Unknown
Carbon tetrachloride	1985	117											
	1984	273								29 L			
	1983	204								64 L			
	1982	208											
	1981	341											
	1980	356											Records do not exist for the other categories

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Disposition						Unknown
			Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	
Chlordane	1983	189						19 L	Records do not exist for the other categories
	1984								

Estimated Distribution in %

Approximately 1590 kg is used to treat the the Sewage Treatment Plant effluent

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	Un-site			Other	Unknown
							Burial	Burial	Off-site		
Chloroform	1985	159							19 L		Records do not exist for the other categories
	1984	121							37 L		
	1983	114							68 L		
	1982	246									
	1981	261									
	1980	167									

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

Estimated Distribution in %

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Chromic acid	1985	886						606 L		Records do not exist for the other categories
	1984	787						77 L		
	1983	1,911						188 L		
	1982	806								
	1981	2,502								
	1980	1,590								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Coal-oil mixture	1982	18,925								Records do not exist for the other categories

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Coal Tar Pitch	1984	15,405								
	1983	4,164								
	1981	2,445								
								103 L		Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
Cyclohexane	1985	30							21 L			Records do
	1984	64							20 L			not exist for
	1983	61							8 L			the other
	1982	102										categories
	1981	129										

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Estimated Distribution in %							
			Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Diazinon	1983	19								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
2,4-Dichloropenoxy acetic acid	1983	189								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
Diethylbenzene	1985											
	1984	3										
	1983	2,182										
									95 kg			Records do not exist for the other categories

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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Diethylenetriamine pentacetic sodium salt	1984	545								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
1,4-Dioxane	1985	8						20 L		Records do not exist for the other categories
	1984	45						77 L		
	1983	23						80 L		
	1982	61								
	1981	19								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Estimated Distribution in %							Records do not exist for the other categories
			Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	
Disulfoton (Disyston G)	1982	5								

Estimated Distribution in %

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
							Burial	Storage	Burial	Storage		
Endcor	1984	5,413				15,540 L						
	1983	5,413				Presently in storage						Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product							Records do not exist for the other categories
			Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown	
Epoxy Resins	1985	379						19 L		
	1984	36						69 L		
	1983	19						235 L		
	1981	19								

Estimated Distribution in %

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product							Records do not exist for the other categories
			Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown	
Ethyl alcohol	1985	4,648						5 L		
	1984	4,444						17 L		
	1983	4,943						45 L		
	1982	8,017								
	1981	12,438								
	1980	12,260								

*The majority of solvent wastes occur as mixtures of several different chemicals and are managed as ignitable wastes (D001). These wastes are not mixed intentionally, rather, they are a result of the waste generating process.

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ethyl alcohol, denatured	1985	2,354								Records do not exist for the other categories
	1984	3,164								
	1983	3,679								
	1982	1,980								
	1981	2,048								
	1980	1,858								

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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ethyl ether	1985	305						6 kg		Records do not exist for the other categories
	1984	495						30 kg		
	1983	455						36 kg		
	1982	745								
	1981	707								
	1980	355								

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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ethylene glycol	1985	16,484						5 L		Records do not exist for the other categories
	1984	18,683						1488 L		
	1983	27,392						900 L		
	1982	18,895								
	1981	18,679								
	1980	14,296								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ferric chloride	1985	705						< 1 kg		Records do not exist for the other categories
	1984	216						48 kg		
	1983	628						11 kg		
	1982	894								
	1981	1,227								
	1980	1,255								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ferric sulfate	1985					1136 L		< 1 kg		Records do not exist for the other categories
	1984					Presently in storage		95 kg		
	1983							< 1 kg		
	1981	1,000								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Formaldehyde	1985	503						3 L		Records do not exist for the other categories
	1984	284						21 L		
	1983	47						9 L		
	1982	121								
	1981	121								
	1980	98								

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Disposition						Unknown
			Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	
Formamide	1985	4						10 L	Records do not exist for the other categories
	1984	34						5 L	
	1983	8						9 L	
	1982	416							
	1981	8							

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Hexane	1985	628						39 L		Records do not exist for the other categories
	1984	1,272						41 L		
	1983	1,014						52 L		
	1982	1,313								
	1981	1,075								
	1980	1,188								

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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Hydrochloric acid	1985	669,415						25 L		Records do not exist for the other categories
	1984	647,076						73 L		
	1983	843,888						123 L		
	1982	219,295								
	1981	120,564								
	1980	132,906								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Hydrofluoric acid	1985	921						5 kg		Records do not exist for the other categories
	1984	1,230						26 kg		
	1983	1,262						2 kg		
	1982	940								
	1981	1,402								
	1980	1,130								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Hydrogen peroxide	1985	1,341						7 kg		Records do not exist for the other categories
	1984	2,020						1 kg		
	1983	1,884						13 kg		
	1982	2,137								
	1981	1,785								
	1980	3,296								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Isopentane	1985	409								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
Isopropyl alcohol	1985	5,988							628 L			Records do not exist for the other categories
	1984	10,628							4 L			
	1983	13,263										
	1982	14,599										
	1981	13,963										
	1980	20,787										

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Estimated Distribution in %

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (L)	Estimated Distribution in %							
			Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Lasso (2-Chloro-2',6'-diethyl-N-Methoxymethyl acetanilide)	1982	9								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Off-site		Other	Unknown
							Burial	Burial		
Lead, sheet	1985	3,238								
	1984	4,934								
	1983	6,892								
	1982	6,095								
	1981	3,920								
	1980	5,471								

Records do
not exist
for the other
categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site		Off-site		Unknown
							Burial	Burial	Burial	Other	
Lindane	1983	1									Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site		Off-site		Other	Unknown
							Burial	Burial	Burial	Burial		
Magnesium nitrate	1985	91							< 1 kg			Records do not exist for the other categories
	1984	727							1 kg			
	1982	12							< 1 kg			

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site		Off-site	
							Burial	Burial	Other	Unknown
Malathion	1983	76								
	1982	76								
	1981	91								

Records do
not exist for
the other
categories

Estimated Distribution in %

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Methyl alcohol	1985	108,970						22 L		Records do not exist for the other categories
	1984	92,702								
	1983	95,390								
	1982	141,847								
	1981	122,411								
	1980	278,883								

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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Methyl ethyl ketone	1985	575						4 L		Records do not exist for the other categories
	1984	689						21 L		
	1983	1,628						14 L		
	1982	1,949								
	1981	3,009								
	1980	2,157								

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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site		Off-site	
							Burial	Burial	Other	Unknown
P, P' -Diamino- diphenylmethane	1984	91								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Methylene chloride	1985	9,470								
	1984	9,746								
	1983	13,017								
	1982	15,333								
	1981	9,637								
	1980	10,201								
								4 L		Records do not exist for the other categories

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Estimated Distribution in %

Records do not exist for the other categories

Estimated Distribution in %

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
Naphtha	1985	6,245										
	1984	4,788										
	1983	6,037										
	1982	3,331										
	1981	2,498										
	1980	1,665										
								4 L				Records do not exist for the other categories

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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Nickel chloride	1985	136						< 1 kg		Records do not exist for the other categories
	1984	545						209 kg		
	1983	2,250						17 kg		
	1982	165								
	1981	265								
	1980	1,444								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Nickel sulfate	1985									Records do not exist for the other categories
	1984	173						< 1 kg		
	1983	236						< 1 kg		
	1982	227						14 kg		
	1981	827								
	1980	1,127								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Nitric acid	1985	10,647				106,832 L		4 L		Records do not exist for the other categories
	1984	17,895				Presently in storage		188 L		
	1983	17,036						920 L		
	1982	20,352								
	1981	22,581								
	1980	23,679								

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Nitric oxide	1985	3								Records do not exist for the other categories
	1984	2								
	1983	12								
	1982	4								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Orthene (Acetyl-phosphoramido-thioic acid-0,5-dimethyl ester)	1983	2								
	1982	1								
	1981	1								

Records do not exist for the other categories

Estimated Distribution in %

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
Pentane	1984	30										
	1983	38										
	1982	76										
	1981	238										
									1 L			Records do not exist for the other categories

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Disposition						
			Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other
Perchloric acid	1985	494						12 kg	Records do not exist for the other categories
	1984	290					6 kg		
	1983	279					34 kg		
	1982	358							
	1981	306							
	1980	291							

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
Petroleum ether	1985	193										
	1984	189							16 L			
	1983	238							24 L			
	1982	314										
	1981	193										
	1980	379										
												Records do not exist for the other categories

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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
Phenol	1985	29							9 kg			
	1984	40							78 kg			
	1983	22							56 kg			
	1982	40										
	1981	77										
	1980	35										
												Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Phenolic resin	1985	91							Records do not exist for the other categories

Estimated Distribution in %

[illegible]

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Polychlorinated biphenyls (PCBs)	1985							5,616 kg		
	1984							18,000 kg		
	1983							5,800 kg		

*There is approximately 25,200 L (> 500 ppm) and 3,017 L (50-500 ppm) PCB containing oils currently in use in various transformers and other electrical equipment.

Estimated Distribution in %

Records do not exist for the other categories

Estimated Distribution in %

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Pramitol	1983	227							Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Disposition						Records do not exist for the other categories	
			Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial		Other
Pyridine	1985								13 L	
	1984								7 L	
	1983								17 L	
	1982	72								
	1981	87								

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Ronstar	1983	455								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product							Records do not exist for the other categories
			Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown	
Round-up (N-phosphono-methyl glycine isopropylamine salt)	1984	11								
	1983	182								
	1982	38								

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product					On-site			Off-site		Unknown
			Airborne Release	Liquid Effluent	Storage	Burial	Other	Storage	Burial	Other	Burial	Other	
Silicon tetrafluoride	1982	3,125											Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
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Silvex	1983	284								Records do not exist for the other categories
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ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial		Off-site Burial		Other	Unknown
							Burial	Storage	Burial	Off-site		
Sodium bifluoride	1985	955										
	1983	1,510										
	1982	1,318										
	1981	1,091										
	1980	1,500										

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sodium cyanide	1985	92						1 kg		Records do not exist for the other categories
	1984	2						3 kg		
	1983	1,002						3 kg		
	1982	365								
	1981	182								
	1980	727								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sodium dithionite	1985	227						< 1 kg		Records do not exist for the other categories
	1984	455						< 1 kg		
	1983	114								
	1982	12								

Estimated Distribution in %

Records do not exist for the other categories

Estimated Distribution in %

Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sodium nitrate	1985	17,070						2 kg		Records do not exist for the other categories
	1984	9,815						53 kg		
	1983	13,883						3 kg		
	1982	10,248								
	1981	9,025								
	1980	10,215								

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sodium sulfide	1985							3 kg		Records do not exist for the other categories
	1984							4 kg		
	1983	500						3 kg		

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Disposition							Unknown
			Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	
Subdue E2	1982	4								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sulfur hexafluoride	1981	7,214								Records do not exist for the other categories

ESTIMATED CHEMICAL USAGE

Estimated Distribution in %

Chemical Name	Year	Quantity Used (kg)	Product	Airborne Release	Liquid Effluent	On-site Storage	On-site Burial	Off-site Burial	Other	Unknown
Sulfuric acid	1985	7,305				41,143 L		7 L		Records do not exist for the other categories
	1984	9,606				Presently in storage		75 L		
	1983	11,582						81 L		
	1982	5,185								
	1981	5,042								
	1980	7,244								
	1943-1979	3,800/yr	Steam Plant Operations							

Estimated Distribution in %[illegible]